

# EARLY MANUFACTURING IN LANCASTER COUNTY: 1710-1840

(PART 3, CHAPTER V)

## METAL, LEATHER, AND WOOD CRAFTS

*FREDERICK HUBLEY, COPPERSMITH, in the Borough of Lancaster, makes all sorts of COPPER and BRASS WARE, in the neatest and best manner . . . in Queenstreet Lancaster, viz. STILLs, brewers, hatters, wash, fish and tea kettles, bake-pans, sauce-pans, etc. etc. which he is determined to sell as low as any person can sell in Philadelphia, Lancaster, or elsewhere.*

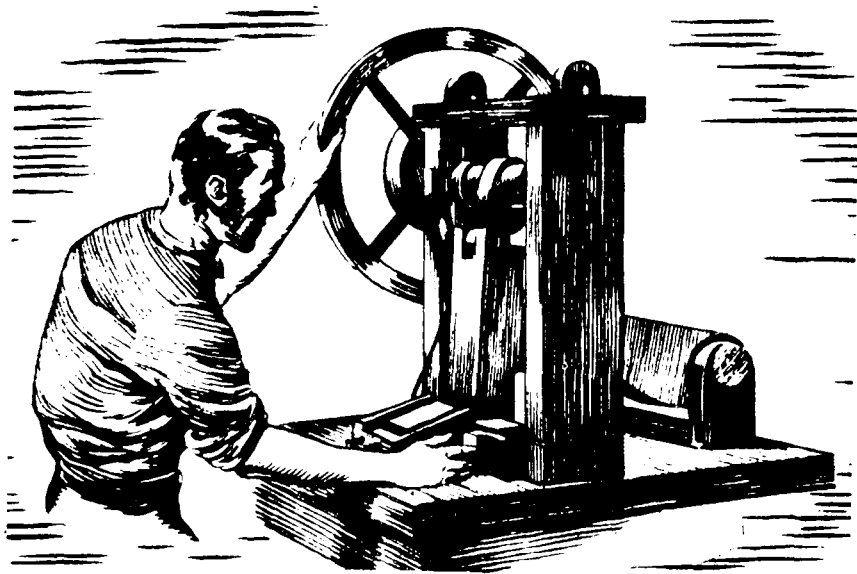
PENNSYLVANIA GAZETTE, July 14, 1773

Many of the German immigrants who came to Lancaster County during the eighteenth century were skilled craftsmen. Finding land plentiful and cheap, these men responded in large numbers to the attractions of agriculture and turned to farming. Frequently, however, they practiced their crafts simultaneously or at certain seasons of the year. Rooms in dwelling houses were converted into workshops, and manufactories such as smitheries, tanyards, and cooperages were erected on farms and carried on as auxiliary enterprises.<sup>1</sup> Soon the region hummed with busy craft industries which increased rapidly in both number and variety with the passage of time. In the borough of Lancaster, the craft center of the area, the number of artisans leaped from less than 300 in 1773 to more than 600 in 1814.<sup>2</sup> These busy town workmen had many hundreds of fellow craftsmen in the rural districts by the close of the eighteenth century, and Lancaster County had become one of the leading manufacturing counties in the state.<sup>3</sup>

Craftsmanship in iron was essential to progress in a newly settled country where there was pressing need for nails, horseshoes, tools, guns, and many other similar articles. Lancaster County craftsmen who specialized in secondary iron manufactures in the eighteenth century soon enjoyed the advantage of a ready supply of raw

materials as furnaces and forges were erected in the neighborhood. Along with other artisans, they profited from an inland location which protected them to some extent from the competition of imported wares, while at the same time it gave them easy access to the western trade with its demands for guns, edge tools, and other iron products.

The urgent need for iron wares soon stimulated the rise of shop industries in this line, one of the first and most important being blacksmithing. It would be difficult to overestimate the contributions of the strong and resourceful craftsmen whose glowing hearths and ringing hammers supplied the community with such a



The simple hand-operated nail machine produced many times more nails than the hand-forged. Rods from the slitting mill were fed into the machine.

Courtesy of Lukens Steel Co. and Iron Age magazine

wealth of necessary and often artistic wares. Before specialization deprived him of many of his functions, the blacksmith was a versatile artisan qualified to create almost anything which could be made from iron, and farmers and many lines of craftsmen found his services indispensable.<sup>4</sup> There were a number of blacksmiths in the town of Lancaster as early as 1743, for they caused a public nuisance there at that time by burning charcoal for their hearths.<sup>5</sup> By the early nineteenth century, this craft had become a relatively large industry in the county with 176 shops which had a total annual production valued at more than \$100,000.<sup>6</sup> As the increase of population expanded the market for iron goods, it became possible for some workmen to major on special lines of production. The gunsmith, locksmith, and nailsmith, all of whom appeared in the town of Lancaster before 1773, repre-

sent early and important forms of such specialization. Later appeared the makers of bridle-bits and stirrup-irons, tool makers, and other iron workers.<sup>7</sup>

A few of the iron specialties mentioned are worthy of particular notice here. The manufacture of nails became an important industry and reached a \$35,000 annual production level in the early nineteenth century, an amount greater than the total value of manufactured copper, brass, and tin.<sup>8</sup> Technologically the nailsmith's craft had advanced to the stage of simple nail cutting machinery by this time, and an average shop in 1810 was capable of producing ten or more tons of nails per year.<sup>9</sup> With the building of two new rolling and slitting mills before the close of the period of this study, the county had facilities for the mass production of nails, one of the mills in question supplying 500 tons per year.<sup>10</sup>



Water-powered tilt hammers worked charcoal iron plate in the numerous forges along the creeks of Lancaster County. The hammer from Speedwell Forge is exhibited in the Society's museum.

Courtesy of Lukens Steel Co. and Iron Age magazine

During the eighteenth century, tool making in Lancaster County was largely in the hands of blacksmiths who worked on order and produced implements which varied considerably according to the preference of the purchaser and skill of the maker. There is some evidence, however, of specialization in edge tools in that period. Craftsmen who manufactured the pointed auger or gimlet were found among the Pennsylvania-Germans before the Revolution, but it was William Henry of Lancaster to whom fell the honor of inventing the useful screw auger with its horizontal cutters and hollow screw to remove the chips. Henry's experiments with the new tool came to fruition in 1771, after which the inventor entered into an agreement with a Lititz gimlet manufacturer who produced the implement for sale.<sup>11</sup>

An agricultural environment such as Lancaster County provided naturally stimulated the production of edge tools needed by the farmer. Sickles manufactures developed in Drumore Township where the "sickle smith" was known in the latter part of the eighteenth century.<sup>12</sup> This industry was well established in the early nineteenth century when several sickle mills operated by water power were located in that township.<sup>13</sup> Many of the best grass scythes used in the county were imported from England. However, in the 1820's local manufacturers were producing scythes which many persons considered equal or superior to the imported English article. In this period the cutlers' shops also supplied tools such as drawing and cutting knives and axes.<sup>14</sup> A noted edge tool maker in the county toward the close of the period of this study was William Brady who had his manufactory at Richland, now Mount Joy. This establishment, known as the Richland Edge Tool Factory, was especially noted for the extensive manufacture of axes.<sup>15</sup>

The decade of the 1830's was very important for the development of secondary iron manufactures in Lancaster County. Prior to this time there had been growth and development in the industry, but in no period of similar length were the changes as striking as those which took place from 1830 to 1840 when the erection of machine shops, iron foundries, and the introduction of steam power worked a veritable revolution in the manufacture of iron.

Small brass foundries had a place in the economic life of the county at least as early as 1773, but the iron foundry boom came toward the close of the period of this study.<sup>16</sup> The immediate stimulus for this boom was the coming of the railroad. Although the Columbia and Philadelphia line was not completed through to Columbia until 1834, Lancaster City industry began to stir before that time. As early as 1832, the construction of railroad cars began in the city, and in that year a completed car made by the Lancaster Stage Company was placed on the finished part of the road to convey passengers between Paoli and Philadelphia.<sup>17</sup> Railroad cars in that day were small and made largely of wood, but parts such as wheels and axles created a market for foundry work, while the need for locomotives greatly stimulated the machine shop industry. In addition to supplying railroad castings, the several cupola foundries did mill and factory work and produced forge hammers and anvils, hollow ware, and plow castings, while the machine shops made machinery of all kinds.<sup>18</sup>

Another striking evidence of the impact of the coming of the railroad upon the economic life of the area is found in the records of the United States Patent Office. Between 1829 and 1839 no fewer than twelve patents were granted to Lancaster County residents for inventions relating to railroading, and the patentees include men such as David Cockley and William W. Pennell who were active in the foundry business in Lancaster.<sup>19</sup> Two of the patents are of special interest. In 1829 James Wright of Columbia patented the beveled tread wheel.<sup>20</sup> This invention which made rigid frame cars self-adapting on curved track was one of the outstanding contributions to railroad development. Nine years later Samuel Truscott, George Wolf, and James Dougherty, also of Columbia, were granted the first patent for a solid railroad car wheel casting made in America. This wheel had two plates, convex on one side and concave on the other, in place of the usual arms or spokes, with the hub to receive the axle cast in the center of them and extending

from one to the other. Plates, axle, and rim were cast in a single solid piece.<sup>21</sup>

While the erection of iron foundries and machine shops began in Lancaster City in the early 1830's, the greatest industrial progress was made there during the latter part of the decade.<sup>22</sup> In fact, as late as 1835, forward looking individuals were much annoyed by the atmosphere of economic lethargy which prevailed. A local editor wrote bitterly in that year as follows:

There is probably no portion of the State which possesses greater advantages for the successful prosecution of manufacturing purposes than the city and vicinity of Lancaster; and we are grieved to be compelled to add that we know of no section of the country, similarly situated, where these advantages are so grossly, so generally, and we had almost said, so criminally neglected and undervalued. Situated as we are in the midst of what has been not inaptly termed "The Garden of Pennsylvania," — with a soil rich beyond all comparison, and capable of sustaining three times the amount of our present population — with almost unequalled facilities of transportation to and from the markets of the Atlantic cities, by means of railroads, turnpikes, canals and slackwater navigation — with a sufficiency of water power, and abundance of surplus capital, and no scarcity of mechanical genius — there is yet a want of enterprise, a lack of public spirit, and a seeming disregard of the usual promptings of interest, as strange as it is unnatural, and for which we have in vain endeavored to account. And this absence of the customary incentives to action — this want of individual enterprise — this criminal neglect of the great natural and artificial advantages with which we have been favored — has already done more and will continue to do more to retard the prosperity of this city, than all other disadvantages under which it labors combined. Speak of these things to any of our monied men, and they will readily admit the truth of all that is here said . . . (23)

The tide was soon to turn, however, and only five years later another editor looking over the scene was able to write: "This city, within the last few years, has undergone a great change. A new spirit is awakened; industry and enterprise are now observable in all parts of the city."<sup>24</sup>

One enterprise more than any other marks the transition in secondary iron manufactures in Lancaster City. This was a large locomotive foundry and machine shop which had its inception about 1835 when John Brandt, David Cockley, and George Heckert united in the purchase of a site for its erection.<sup>25</sup> The project was brought to fruition in 1837 by a partnership acting as David Cockley and Company. Two large adjoining buildings in West Chestnut Street housed the works. The air blast for the cupola was powered by a Baldwin steam engine which also turned an iron lathe in the other building.<sup>26</sup> Two years later an editor who visited the foundry, wrote: "Our citizens cannot, possibly, be aware that there is, within the bounds of the city, such evidences of enterprise . . ." Five stationary steam engines were under construction, two of them intended for manufacturers in the city of Lancaster. Forty hands were in steady employment in the works, which shows that a factory stage of operations had been reached.<sup>27</sup>

The foundries which have been referred to showed a tendency to concentrate in Lancaster and along the route of the Columbia and Philadelphia Railroad. Many of them produced brass castings as well as iron.<sup>28</sup> Both the foundries and machine shops commonly did general work, but there are occasional signs of specialization. Thus, although William Kirkpatrick advertised general turning and fitting in his

Lancaster manufactory, he was employed chiefly in the production of threshing machines and other agricultural equipment, and there were at least two other threshing machine manufactories in operation in the county before 1840, one in Lancaster and one in Mount Joy.<sup>29</sup> The Conestoga Foundry near Lancaster manufactured cooking stoves about this same time.<sup>30</sup>

As may be inferred from the preceding discussion, the decade of the 1830's marks the introduction of steam power into Lancaster County industry. Toward the close of that decade, steam engines were both used and built in the local foundries and machine shops. The first railroad locomotive made in Lancaster, the **Hugh Keys**, was operated successfully in 1840.<sup>31</sup> Pennel, Lenher, and Humes, in whose machine shop this locomotive was built, had two five horsepower engines under construction for a Conestoga tow-boat in the same year, concerning which a local editor wrote:

Thus Lancaster will have the honor of taking the lead in furnishing to the Union a pattern steamboat, for towing vessels upon our canals instead of horses — a matter of great importance as respects rapidity of movement and saving of expense. (32)

This tow-boat was launched in the summer of 1841.<sup>33</sup> The engine builder, machinist, and pattern maker were listed among the Lancaster City artisans in 1843.<sup>34</sup>

In 1838 the Federal Government had under consideration the erection of a national foundry where cannon could be cast for the Army and Navy of the United States. The people of Lancaster were greatly excited at the prospect and petitioned Congress to have the establishment located in the neighborhood of their city.<sup>35</sup> A local editor wrote: "Our citizens are all agog on this matter."<sup>36</sup> Although this foundry never materialized, the assumption of the memorialists that water power would be preferred for such an establishment is of considerable interest, for it reflects a blindness to the implications of the developing technological revolution in power. While water power was still in general use in the area, progressive Lancaster County industrialists were shifting to steam and ushering in an epoch which would eventually doom the water wheels to stand still.

Metal workers, other than those already discussed, played a prominent part in the early economic life of Lancaster County. Johann Christopher Heyne, one of the great eighteenth century American pewterers, lived and worked in Lancaster prior to his death in 1781.<sup>37</sup> An authority on American pewter states that, though many another American pewterer had a more profitable business or attained greater local prominence, ". . . none has enriched us with such a significant group of pewter forms. Christopher Heyne's vessels are the acme of laboratory material for the student of colonial pewter."<sup>38</sup> Among Heyne's famous pieces are communion flagons owned by Trinity Lutheran Church in Lancaster.

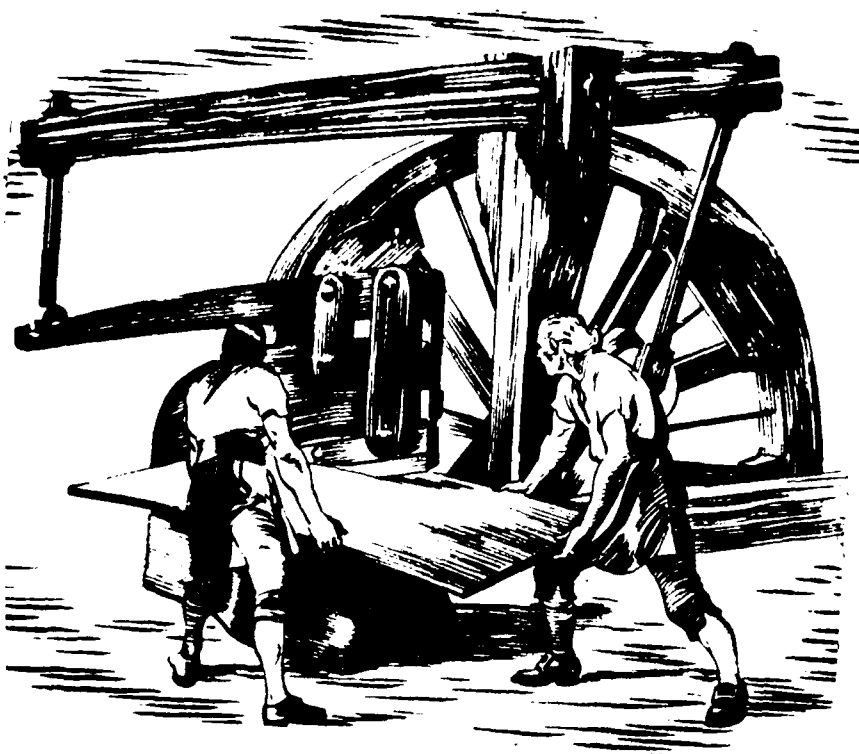
During the period of this study, precious metal artisans were never numerous in Lancaster County, and their productions were limited. In a relatively young community, the primary emphasis was upon practical necessities rather than upon lux-

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Early rolling and slitting mills fashioned from charcoal iron blooms and slabs plates which could be slit into strips or rods on the "alligator" shears. This illustration shows the "Old Mill" built in 1810 on Brandywine Creek, now part of Lukens Steel Co.



ury goods. Since the population was predominantly rural and agricultural, much of such wealth as did accumulate tended to take the forms of land and improvements. Thus there was no large local demand for silver plate which was commonly employed in that period to concentrate and conserve value. Finally, there was no large wealthy urban class to patronize the craftsmen in the precious metals. However, the services of these workmen were in limited demand. Silversmiths appeared in Lancaster at least as early as 1773, and later an occasional goldsmith and jeweller worked there.<sup>39</sup> As late as 1810, the annual production of gold and

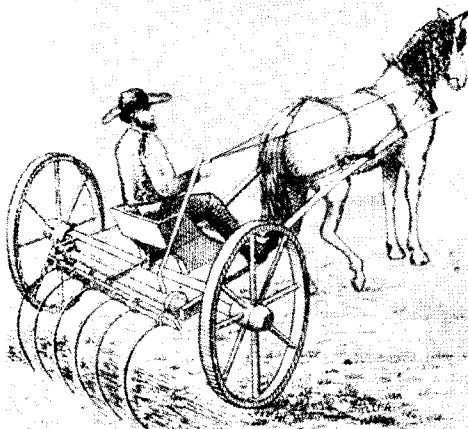
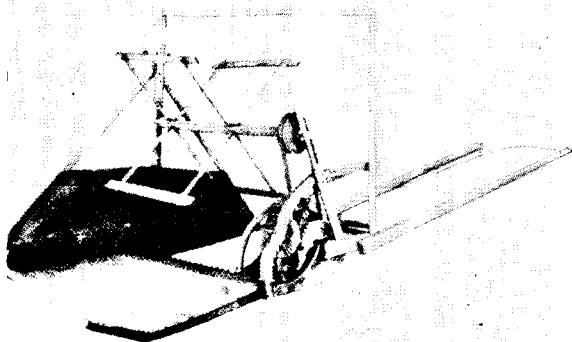
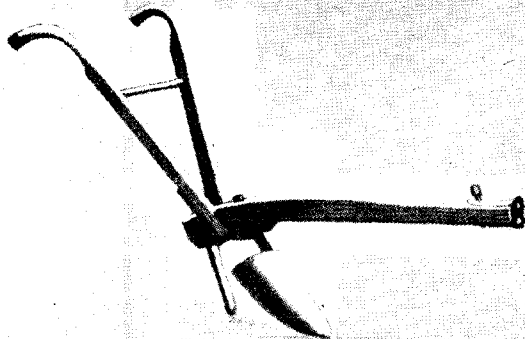
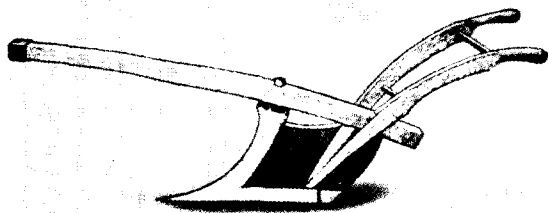


Water-powered slitting shears represented a great advance in the working of iron.

Courtesy of Lukens Steel Co. and Iron Age magazine

silver work and jewelry in the county was small with an annual value of less than \$2,000. There was no growth of the precious metal industries between that time and the close of the period under consideration.<sup>40</sup> Such a small market could support few artisans, and it is not surprising to find precious metal craftsmen carrying on other businesses simultaneously, a practice not uncommon in other craft lines as well.<sup>41</sup> Peter Getz, goldsmith and jeweller in Lancaster in 1796, was un-





(top, left) Cast-iron plough patented in 1797. (top, right) Horse hoe of 1820 improved planting and cultivating. (bottom, left) Reaper of the 1830's represents the first great stride toward mechanization of the harvest. (bottom right) Early spring-tooth sulky rake, hand-dumped, was used for windrowing or bunching.

Courtesy of Farm Equipment Institute and New Holland Machine Company

usually versatile, for he also manufactured fire engines.<sup>42</sup> William Haverstick, goldsmith and jeweller contemporary of Getz, was a merchant.<sup>43</sup> Another craftsman found occasionally in Lancaster County prior to 1840, and one who would classify with the workers in precious metals, was the silver plater. His craft was plied on articles such as bridle-bits and stirrup-irons and thus served other crafts including saddlery and coachmaking.<sup>44</sup>

The stately, dependable, grandfathers' clocks which have been treasured for generations in Lancaster County families, call attention to the clock and watch makers, another group of metal workers represented at an early date in the borough of Lancaster.<sup>45</sup> Although they are referred to as "makers" of timepieces, it appears that these early craftsmen imported most of the essential mechanical parts from Europe. Birmingham, England, was the source of many of the works installed in the grandfathers' clocks manufactured in the area. As a rule, the attractive wooden cases for these clocks were produced for the clock artisans by the cabinet makers. The eight-day clock was the most popular model, although there was considerable demand for the cheaper thirty-hour clocks.<sup>46</sup> Among the early county artisans who

are recognized as the makers of fine grandfathers' clocks, are George and John Hoff, John Eberman and several of his sons, and Martin Shreiner whose clocks were made after both English and German patterns and were guaranteed for ten years.<sup>47</sup> Some clocks were made with alarms and an occasional one with a musical mechanism.<sup>48</sup> Thus in 1811 John Hoff of Lancaster engaged to supply a clock which would "play ten tunes strike the quarters and repeat whenever wanted."<sup>49</sup> The account book of this particular craftsman provides an interesting insight into barter exchange in Lancaster in the early nineteenth century. Among the items which he accepted in exchange for his clocks were women's shoes, a dining table, a clock case, hickory wood, watches, a bedstead, a bookcase, and white pine boards. Henry Witmer even paid him with a "patent wright (right) for the condensing tub," a device used in distillation.<sup>50</sup>

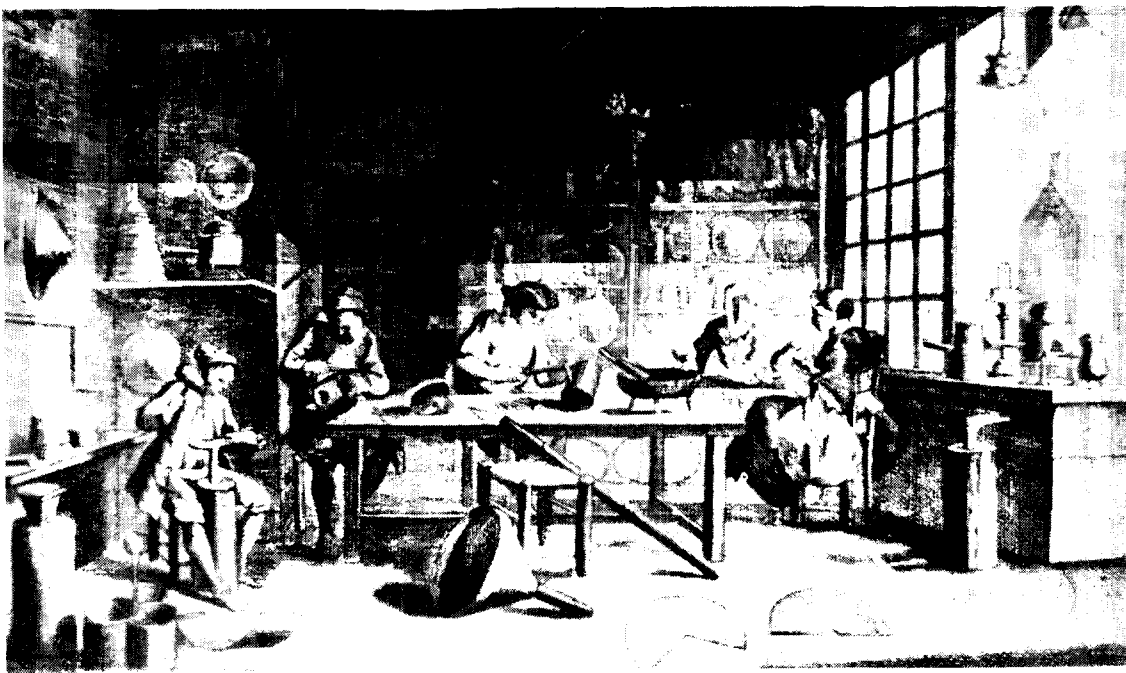
Another group of artisans whose services were in great demand during the period of this study were the workers in sheet metal — copper, tin plate, sheet iron, and brass. Generally two or more metals were worked in a single shop, and craftsmen who specialized in one metal were rare. Common operations involved in working the different metals made such combinations practicable, and the prospects of larger markets then could be exploited with a single metal made them attractive. The most common combination was copper and tin plate, with sheet iron frequently thrown in for good measure.<sup>51</sup> A smaller number of sheet metal workers combined craftsmanship in copper and brass.<sup>52</sup>

A large assortment of products came from the sheet metal shops. There were kettles for all purposes — fullers', hatters', brewers', coloring, wash, fish, tea, ash, and stove kettles. Other items included roofing, coffee pots, boilers, stew and

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Late 18th Century sheet metal, or tinsmith's, shop. Soldering irons were heated in charcoal braziers on counter at right.

Diderot and d'Alembert's "Encyclopedie"



saucepans, buckets, roasters, stoves, and tin plate by the box.<sup>53</sup> The manufacture of house pipe, or spouting, was begun in Lancaster by William P. Atlee at least as early as 1795.<sup>54</sup> In view of the large county distilling industry, the copper liquor still was so much in demand that pictures of stills were occasionally used in advertisements to symbolize the sheet metal worker's craft.<sup>55</sup> During the Revolution a special market was created for canteens and camp kettles for the troops.<sup>56</sup> A large consumption of sheet metal products may be inferred from the steady increase in the number of craftsmen who made them. The few sheet metal workmen in the borough of Lancaster in 1773, where the sheet metal shops tended to concentrate, increased to fifteen in 1814 and to twenty-four in 1843.<sup>57</sup> Seventeen copper, brass, and tin manufactories were in operation in the county in 1810, with an annual production valued at about \$20,500.<sup>58</sup>

Like metal working, craftsmanship in leather of necessity received early attention in Lancaster County. Shoes, saddles, harness, ammunition bags, and other leather products were required by the inhabitants from the time of earliest settlement. In the eighteenth century, the settlers' and traders' pack-trains which wended their way westward to the frontier created a special demand for pack-saddles which the Lancaster leather workers were in a strategic position to supply.<sup>59</sup> Another market was opened during the Revolution when large quantities of leather goods were required by the Continental Army.<sup>60</sup> As a result of these stimulating factors, important leather manufactories soon developed in and around Lancaster. Sixty-four of the less than 300 craftsmen in the town of Lancaster in 1773 were connected with the various branches of the leather trades.<sup>61</sup>

The primary leather manufactories, the tanneries, served the leather workers as the furnaces and forges served the secondary manufacturers of iron. In them the hides were processed into raw materials for the saddlers and shoemakers. Tanning, although prominent among the manufactures in the borough of Lancaster, was not concentrated there to the same extent that some other industries were, and many tanyards were scattered throughout the countryside.<sup>62</sup> This industry reached a thriving stage before the Revolution, and by 1810 forty county tanneries had an annual production valued at approximately \$79,500.<sup>63</sup> Growth of the industry continued to the end of the period of this study, at which time the number of tanyards had increased to fifty-seven representing a capital investment of nearly \$275,000, or about twenty-two per cent of the total manufacturing investment in the county. No other county in Eastern Pennsylvania had as many tanneries or as large an investment in tanning at this time as did Lancaster, although Philadelphia County was far ahead in value of tannery products.<sup>64</sup>

Like many other manufactures, tanning began as a branch of home industry, but progressed rapidly to the shop stage. The first small tanyards gradually evolved into establishments which represented an average investment of about \$4,000 to \$5,000 at the close of the period of this study.<sup>65</sup> These later tanneries varied considerably in productive capacity, but some were relatively large. Thus one in Martic Township in 1816 had seventy-nine tanning vats and was housed in a three-story stone building seventy-five by thirty-three feet.<sup>66</sup> The following detailed description of "Eby's Tannery" near Manheim throws additional light upon the local tanneries in the 1820's:

The Tan-Yard contains 35 tan vats, 8 latches and 5 handlers; the latches and handlers can all be drained into a cistern, out of which the draining can be pumped at pleasure by water power. There are three bath handlers, which are also made to drain off; 2 large water pools, which are supplied continually with running water, and three lime vats, with hoisting apparatus.

The Tan House is large and roomy, being 28 by 43 feet in size, and two stories high, the first floor containing the latches, handlers, baths and water pools above referred to, and a pounding machine for breaking hides, which works by water power. The second floor is occupied as a currying shop, and the third floor or garret, arranged as a drying loft, to which the hides and leather are hoisted by water power. In the building are 2 Cast Iron Bark Mills, of the most approved construction, either of which will grind 30 bushels of bark in an hour, and are propelled by water power. Contiguous to the Tan House, are Bark Granary's, Bark Sheds, a Steam Sweating House, and many other necessary conveniences . . . (67)

It will be noted that water power was employed for pumping, hoisting, and machine operations in this tannery. Cast iron bark mills were included among the machinery. The curry shop indicates that dressing-leathers which required mechanical manipulation and treatment with fats and oils subsequent to the tanning process, were manufactured in this establishment.

Locally grown hides were processed by the early tanneries, but the expanding industry outgrew this source of supply before the end of the eighteenth century, and the importation of foreign hides began. Most of these imported hides were grown in Spanish territories in the Caribbean region and the southern part of South America, but some were also secured from the Carolina vicinity.<sup>68</sup> In addition to hide raw materials, the tanneries consumed large amounts of tan bark. This was secured from the neighboring woodlands where white oak, an excellent bark for tanning, and other good barks abounded. Local bark supplies were supplemented from the Susquehanna River trade during the early nineteenth century.<sup>69</sup> Special bark mills were employed by the tanneries. In these mills the dry tan bark was laid out on corduroy-like flooring and broken into bits by large single stones with teeth resembling those of cog-wheels. Cast iron bark mills were also in use before the close of the period studied.<sup>70</sup>

Saddlery and shoemaking were already clearly differentiated leather crafts in Lancaster Borough in 1773. Like tanning, both were well represented in the rural districts as well as in the town.<sup>71</sup> Various products were supplied from the shops of the saddlers. The demand for pack-saddles declined as the western trade slackened. Other products which continued to be important throughout the period of this study included saddles, saddle bags, bridles, valises, whips, harness, traveling trunks, and leather bags of different descriptions.<sup>72</sup> Production of saddles and bridles in the county amounted to 1,657 pieces in 1810.<sup>73</sup>

Saddlery was a growing industry in the eighteenth century, and by 1814 there were twenty-three saddlers in the town of Lancaster.<sup>74</sup> Specialties such as harness making and whip making, which developed out of this craft, were fairly common by the early nineteenth century.<sup>75</sup> There was a tendency for the harness making phase of the industry to be absorbed by the wheeled vehicle manufactures, while the beginnings of the decline of wagon transportation in the 1830's affected the market for harness and bridles.<sup>76</sup> As a result of these factors, general saddlery was

somewhat weakened as an independent craft by 1840.

The shoemaking branch of the county leather crafts furnished employment for many artisans. Between 1773 and 1814 their number in the town of Lancaster alone increased from twenty-nine to seventy-eight.<sup>77</sup> In 1810 when the county population was about sixty thousand, the shoemakers' shops produced 38,756 pairs of shoes, boots, and slippers.<sup>78</sup> This supply would hardly have been adequate for the needs of the population, and it seems evident that additional shoes were either made in the farm homes or imported from Philadelphia. Toward the close of the period of this study, some of the shoemaking shops approached a factory volume of production, with shelf inventories of locally made shoes ranging from 1,000 to 6,000 pairs.<sup>79</sup> These larger shops had long passed the stage when most shoes were made to order. In view of the scale of production, it is easy to credit at least the quantitative aspect of the statement of one of the principal Lancaster shoe manufacturers in 1843, who assured the public that he constantly employed a large number of competent workmen.<sup>80</sup> Some of the products sound strange to modern ears. One manufactory in 1805 advertised "Cossacks, Suwarrows, Backstraps, Firebuckets, Speer and Doubletongues, Full Boots, Three quarter Boots, and Bootees."<sup>81</sup> Much morocco leather was used by the shoemakers, and "gum elastic shoes" or rubber footwear was manufactured in Lancaster at least as early as 1840.<sup>82</sup>

Along with the metal and leather workmen, the wood artisans performed many essential services in the early economic life of Lancaster County. The first settlers had to depend largely upon their own resources and ingenuity for their homes, barns, furniture, and tools. As population increased with the passage of time, craftsmen who specialized in woodworking crafts appeared and made their services available to the community. The early carpenters were all-around mechanics in wood as the blacksmiths were in iron. Specialization in woodworking made rapid progress in Lancaster County, however. On the eve of the Revolution there were nine carpenters, twenty joiners, six turners, fifteen coopers, and six wheelwrights in the town of Lancaster alone.<sup>83</sup> While all of these crafts were important, two are of particular interest.

Today when everyone is accustomed to the packaging of liquids and solids in glass and metal containers, it is difficult to appreciate how dependent our forefathers were upon wooden casks for this purpose. While they could make some limited use of other containers such as earthenware, bags, and baskets, their wooden casks, particularly barrels and hogsheads, were the only practicable containers for much of the produce of home and industry alike. Thus the cooper's craft was born out of a real necessity. In a great farming, milling, and distilling area like Lancaster County with a vast production of items such as cider, flour, and whiskey, the demand for cooperage services was very great. The craft developed rapidly in the eighteenth century with many shops appearing in both the town of Lancaster and the country districts. By 1810, these shops numbered thirty-seven, and their annual production was valued at \$13,000, a sizable sum considering the cheapness of the raw materials involved.<sup>84</sup> Machines for dressing staves were in use in Lancaster County by 1814.<sup>85</sup>

Wheelwright services were also vital to the early economic life of the region.

Until the advent of canal and railroad transportation in the 1830's, the county depended largely upon roads and wagon transportation. Responding to this challenge, wheelwrights in the Conestoga valley designed and built the famous Conestoga wagon, one of the major contributions to the development of the nation and the westward movement. While there were many variations in detail, certain characteristics distinguished the Conestoga wagon. It had a long deep bed with considerable sag in the middle lengthwise and crosswise, so that shifting loads would settle toward the center and not press upon the end gates and sides. Cover bows followed the lines of the ends of the body, slanting outward and giving the vehicle the familiar Conestoga silhouette. Designed to handle heavy loads over difficult roads, these sturdy wagons linked Lancaster County with city markets and with the West, and made a contribution which can hardly be overestimated.

Wheelwright shops frequently carried on harness making as a branch business.<sup>86</sup> On the other hand, some craft specialization developed within the wheelwright industry with the passage of time and the wheel maker, wagon maker, and chair maker appeared.<sup>87</sup> There is also some evidence of specialization within the coach making branch, for the coach painter, coach trimmer, and coach harness maker were known in Lancaster by 1814.<sup>88</sup> Two Lancaster-made "coachees" may be considered early forerunners of the modern chartered busses. Their owner was prepared to send them "... with parties or families to any part of the United States, either with two or four horses, on moderate terms."<sup>89</sup>

The location of Lancaster on important transportation routes early made that place a stage town.<sup>90</sup> This naturally interested local wheelwrights in the building of stages, and by the early nineteenth century there were several stage manufactories and an extensive industry.<sup>91</sup> When the market for railroad cars developed in the 1830's, the facilities and experience of the stage builders enabled them to enter quickly upon this new line of production.<sup>92</sup> The wheeled vehicle industries reached approximately a \$48,000 level of production in 1810, and as a result of continued growth, exceeded this figure considerably at the end of the period studied.<sup>93</sup> In the 1830's the competition of the Conestoga Slack-water Navigation and the Columbia and Philadelphia Railroad began to impinge upon the wagon building branch.

Cabinet making developed more slowly than some of the other woodworking specialties, and there was no cabinet maker in the town of Lancaster in 1773.<sup>94</sup> However, this craft was well represented by the early nineteenth century when many shops were in production in the county.<sup>95</sup> In the town of Lancaster alone, there were twenty-five cabinet makers in 1814, and some county-made furniture was exported to Philadelphia before the close of the period under consideration.<sup>96</sup>

All kinds of furniture and a variety of other items, such as venetian blinds and coffins, were supplied by the shops of the cabinet makers. John F. Shroder's large cabinet and chair manufactory advertised as follows in Lancaster about the close of the period studied:

**Cabinet Furniture, and Chairs of every description, such as Bureaus, Sideboards, Centre, Pier, Card, and Dining Tables; Ladies' Work Stands and Dressing Bureaus, Wardrobes, Mahogany, Rushbottomed, and Cane seat Chairs; Mahogany Rocking Chairs, Pillar Side Tables, Wash stands,**

Secretaries, Book Cases, Desks, Kitchen Dressers, Bedsteads, Dough Trays, etc. etc. 1500 Chairs and Settees of various colors and qualities, with a great variety of articles too numerous to insert. (97)

Shroder also did turning in wood and brass and was prepared to serve other craftsmen including plumbers.<sup>98</sup> It is evident that furniture establishments such as this had reached small factory status by the close of the period studied.

The finest native wood for cabinet work was the abundant black walnut. Maple was often used also, as was some cherry. For the more ordinary furniture, pine, gum, and poplar were employed.<sup>99</sup> Lancaster County forests supplied few conifers, but the cabinet makers readily secured the needed pine from the Susquehanna River trade.<sup>100</sup> Considerable imported mahogany was used in both solid and veneer forms in the local furniture manufactures, but mahogany products were necessarily more expensive than those made from native woods, and the market for them tended to be limited to the wealthier citizens.<sup>101</sup>

Finely carved furniture pieces dating back to the period under consideration, and somewhat resembling the work of early Philadelphia masters, have come to light from time to time in Lancaster County homes. This has touched off a controversy as to whether the furniture in question is imported or native. The thesis that these occasional pieces are of Lancaster County origin has been strongly argued by a recent writer who attributes them to the skilled handiwork of three generations of artisans by the name of Bachman, the first of whom, Jacob Bachman, worked about the time of the Revolution. No signed pieces have come to light, however, to clinch the argument for Bachman origin.<sup>102</sup>

One final group of woodworkers, the tool makers, requires notice. The rake maker, heckle maker, and plow maker appeared in the county before the close of the eighteenth century.<sup>103</sup> Other wooden tool specialists of the early nineteenth century include the makers of handscrews, jackscrews, and planes.<sup>104</sup> The first named tool employed the threaded principle in a clamping device. Large, threaded, wooden handscrews were also employed in cabinet makers' vices. Jackscrews, which were among the Lancaster exports in the early nineteenth century, were lifting devices utilizing the screw principle.<sup>105</sup> Planes, although requiring metal blades, were otherwise made of wood. Another interesting wood specialist who would not classify as a tool artisan was the pump maker whose craft was known in the county at least as early as 1800.<sup>106</sup>

Metal, leather, and wood crafts were both numerous and varied in the early economic life of Lancaster County. Some degree of specialization was achieved in all three branches by the beginning of the nineteenth century, and all furnish examples of the small factory stage of production toward the close of the period under consideration. The decade of the 1830's witnessed the beginnings in the county of the great technological revolution which resulted from the application of steam power to manufacturing and transportation. An increasing population, location along the main routes to the West, and the coming of the railroad were among the most important factors which influenced the development of the metal, leather, and wood crafts in the area.

## NOTES

- <sup>1</sup> **Pennsylvania Gazette**, Sept. 11, 1760; **Americanische Staatsbothe**, Jan. 29, 1800; **Lancaster Journal**, Jan. 28, 1825; Ebeling, **Die Vereinten Staaten**, IV, 684.
- <sup>2</sup> **Pennsylvania Archives**, 3rd Series, XVII, 454-465; Lancaster Borough Assessment, 1814.
- <sup>3</sup> Enumeration of the Taxable Inhabitants Residing in the County of Lancaster, 1800, Public Records, Harrisburg, Pa. (cited hereafter as: Lancaster County Taxables, 1800); Coxe, **View**, p. 313.
- <sup>4</sup> **Intelligencer**, and **Weekly Advertiser**, Dec. 29, 1807.
- <sup>5</sup> Lancaster Corporation Book, Oct. 24, 1743.
- <sup>6</sup> Coxe, **Arts and Manufactures**, p. 52.
- <sup>7</sup> **Pennsylvania Archives**, 3rd Series, XVII, 454-465; Lancaster Borough Assessment, 1814; **Lancaster Journal**, Sept. 10, 1803. Chapter VI will be devoted to the gunsmiths. See Chapter II for iron manufactures pertaining to agriculture.
- <sup>8</sup> Coxe, **Arts and Manufactures**, pp. 50-51.
- <sup>9</sup> *Ibid.*, **Intelligencer**, and **Weekly Advertiser**, Dec. 29, 1807; **Volksfreund**, May 7, 1811.
- <sup>10</sup> Deed Book C, vol. 5, pp. 224-227; **Lancaster Journal**, Dec. 1, 1826; **House Exec. Doc.**, No. 308, 22nd Cong. 1st Sess., II, 203.
- <sup>11</sup> John Joseph Henry, "Augre," in Abraham Rees, **The Cyclopaedia; or Universal Dictionary of Arts, Science, and Literature**, III.
- <sup>12</sup> Lancaster County Assessment Lists, Martic Township, 1779, Drumore Township, 1796, Lancaster County Archives.
- <sup>13</sup> Joshua Scott, **Map of Lancaster County, Pennsylvania**, 1824.
- <sup>14</sup> **Lancaster Journal**, June 10, 1825.
- <sup>15</sup> Moody and Bridgens, **Map of the Township of East Donegal, Lancaster County, Penna.**, 1850; Everts and Stewart, **Combination Atlas Map of Lancaster County, Pennsylvania**, 1875, p. 15.
- <sup>16</sup> **Pennsylvania Archives**, 3rd Series, XVII, 605; **Lancaster Journal**, April 19, 1805, April 17, 1818.
- <sup>17</sup> **Lancaster Examiner**, Sept. 20, 1832.
- <sup>18</sup> **Bethania Palladium**, May 30, 1834; **Lancaster Intelligencer**, March 14, June 20, Nov. 7, 1837, May 21, 1839; **Lancaster Journal**, Aug. 8, 1834; **Examiner and Herald**, Nov. 12, 1835; **Intelligencer and Journal**, Nov. 19, 1839.
- <sup>19</sup> U. S. **Patents and Designs**, pp. 198-215.
- <sup>20</sup> "Car Truck," patented Sept. 10, 1829, U. S. Patent Office. See also U. S., **Patents and Designs**, p. 207.
- <sup>21</sup> Patent No. 640, U. S. Patent Office.
- <sup>22</sup> **Lancaster Journal**, Aug. 19, 1831, Aug. 8, 1834.
- <sup>23</sup> **Lancaster Examiner and Herald**, Nov. 12, 1835. See also, **Lancaster Intelligencer**, March 14, 1837.
- <sup>24</sup> **Semi-Weekly Gazette**, Aug. 19, 1840. See also, *Ibid.*, Aug. 26, 1840.
- <sup>25</sup> **Lancaster Examiner and Herald**, Nov. 12, 1835.
- <sup>26</sup> **Lancaster Intelligencer**, March 14, 1837; **Lancaster Union**, May 23, 1837. M. W. Baldwin was a noted Philadelphia engine maker in this period. J. L. Bishop, **A History of American Manufactures from 1608-1860**, I, *passim*.
- <sup>27</sup> **Lancaster Intelligencer**, Feb. 26, 1839. David Cockley was one of the first residents of Lancaster County to be styled an engineer. Deed Book E, vol. 6, p. 306.
- <sup>28</sup> **Lancaster Intelligencer**, June 20, Oct. 31, 1837; **Intelligencer and Journal**, Nov. 19, 1839, July 2, 1844.
- <sup>29</sup> **Lancaster Examiner and Herald**, July 5, 12, 1838; J. H. Bryson, **Lancaster Directory for 1843**, p. 30; **Lancaster Intelligencer**, June 11, 1839.
- <sup>30</sup> **Intelligencer and Journal**, Aug. 16, 1842.
- <sup>31</sup> *Ibid.*, Dec. 8, 1840.



- 32 *Semi-Weekly Gazette*, Nov. 21, 1840.
- 33 *Intelligencer and Journal*, July 6, 1841.
- 34 J. H. Bryson, *Lancaster City Directory for 1843*, *passim*.
- 35 *Journal of the House of Representatives of the United States*, Dec. 4, 1838, 25th Cong. 3rd Sess.; *House Report No. 168*, 25th Cong. 3rd. Sess.
- 36 *Lancaster Intelligencer*, March 6, 1838.
- 37 *Pennsylvania Archives*, 3rd Series, XVII, 608. Heyne appears on this artisan list as a "tinman," indicating that he did not confine himself to work in pewter.
- 38 Ledlie Laughlin, *Pewter in America; Its Makers and Their Marks*, II, 44-48.
- 39 *Pennsylvania Archives*, 3rd Series, XVII, 454-465; *Lancaster Borough Assessment*, 1814; *Lancaster Journal*, May 27, 1796, Dec. 9, 1797.
- 40 Cox, *Arts and Manufactures*, p. 53; *Compendium of Sixth Census*, p. 135.
- 41 *Lancaster Journal*, June 17, July 1, 1795; Jan. 1, 1796; Sept. 10, 1803.
- 42 *Ibid.*, May 27, 1796; Dec. 2, 1796.
- 43 *Ibid.*, Dec. 9, 1797.
- 44 *Ibid.*, Sept. 10, 1803; March 15, Dec. 6, 1811.
- 45 *Pennsylvania Archives*, 3rd Series, XVII, 454-465.
- 46 John Hoff, *Book of New Clocks Made and Sold in Lancaster, 1800-1816*.
- 47 *Pennsylvania Archives*, 3rd Series, XVII, 456, 458; *Neue Lancaster Zeitung*, July 27, 1791; D. F. Magee, *L.C.H.S. Papers*, XLIII, 137-164.
- 48 John Hoff, *Book of New Clocks Made and Sold in Lancaster, 1800-1816*.
- 49 *Ibid.*
- 50 *Ibid.* John Hoff was also a hardware merchant and handled a selection of ironmongery, cutlery, saddlery, and mathematical instruments. *Lancaster Journal*, Sept. 10, 1803.
- 51 *Lancaster Journal*, June 17, 1795; Feb. 17, 1796; July 1, 1797; April 17, 1818; April 1, 1825; April 3, 1829; Aug. 11, 1831; Oct. 24, 1837.
- 52 *Pennsylvania Gazette*, July 14, 1773; *Lancaster Journal*, June 19, 1807; Nov. 7, 1817. The second reference is to a combination of copper, brass, and tin plate.
- 53 See the references in the two preceding footnotes, and also, *Lancaster Journal*, April 17, 1802.
- 54 *Lancaster Journal*, June 17, 1795.
- 55 *Ibid.*, Feb. 17, 1796; *Pennsylvania Gazette*, July 14, 1773.
- 56 *Pennsylvania Archives*, 2nd Series, XIII, 524.
- 57 *Pennsylvania Archives*, 3rd Series, XVII, 454-465; *Lancaster Borough Assessment*, 1814; J. H. Bryson, *Lancaster Directory for 1843*.
- 58 Cox, *Arts and Manufactures*, p. 54.
- 59 Pownall, *The Remembrancer*, 1777, p. 488.
- 60 Thomas Anburey, *Travels Through the Interior Parts of America*, II, 175; *Pennsylvania Archives*, 2nd Series, XIII, 511, 521.
- 61 *Pennsylvania Archives*, 3rd Series, XVII, 454-465.
- 62 *Lancaster County Taxables*, 1800.
- 63 *Pennsylvania Archives*, 3rd Series, XVII, 454-465; Cox, *Arts and Manufactures*, p. 56.
- 64 *Compendium of Sixth Census*, pp. 137, 141.
- 65 *Lancaster Union*, March 17, 1835; *Compendium of Sixth Census*, p. 137.
- 66 *Lancaster Journal*, May 13, 1816. See also, *Ibid.*, Oct. 29, 1819.
- 67 *Ibid.*, July 24, 1835.
- 68 *Ibid.*, Sept. 2, 1795; March 28, 1801; Oct. 20, 1802; April 24, June 19, 1807; *Lancaster Intelligencer*, Aug. 25, 1835; Jan. 30, 1838; *Lancaster Intelligencer and Journal*, July 6, 1841.
- 69 *Lancaster Intelligencer and Journal*, Nov. 9, 1841; *Votes of the Assembly*, VI, 220; *Lancaster Examiner*, May 27, 1830.
- 70 *Lancaster Examiner*, July 18, 1833; P. B. Flory, *L.C.H.S. Papers*, LV, 132-133; *Lancaster Journal*, July 24, 1835.
- 71 *Pennsylvania Archives*, 3rd Series, XVII, 454-465; *Lancaster County Taxables*, 1800.

- 72 **Lancaster Journal**, June 16, 1826; April 30, 1830; **Lancaster Examiner**, April 15, 1830.
- 73 Coxe, **Arts and Manufactures**, p. 56.
- 74 Lancaster Borough Assessment, 1814.
- 75 **Ibid.**
- 76 **Lancaster Journal**, April 21, 1798; May 28, 1819; **Examiner and Democratic Herald**, June 16, 1841; J. H. Bryson, **Lancaster Directory for 1843**, p. 43. See also Chapter II.
- 77 **Pennsylvania Archives**, 3rd Series, XVII, 454-465; Lancaster Borough Assessment, 1814.
- 78 Coxe, **Arts and Manufactures**, p. 56.
- 79 **Lancaster Examiner**, June 16, 1831; J. H. Bryson, **Lancaster Directory for 1843**, p. 26.
- 80 J. H. Bryson, **Lancaster Directory for 1843**, p. 26.
- 81 **Lancaster Journal**, March 22, 1805.
- 82 **Ibid.**, July 5, 1800; **Lancaster Examiner**, June 16, 1831; **Lancaster Intelligencer**, Oct. 31, 1837; **Semi-Weekly Gazette**, Sept. 16, 1840.
- 83 **Pennsylvania Archives**, 3rd Series, XVII, 454-465. By the early nineteenth century, the county turners worked in horn and ivory as well as in wood. **Lancaster Journal**, May 5, 1809.
- 84 Coxe, **Arts and Manufactures**, p. 61.
- 85 **Intelligencer, and Weekly Advertiser**, Sept. 3, 1814.
- 86 **Lancaster Journal**, April 21, 1798; **Examiner and Democratic Herald**, June 16, 1841; J. H. Bryson, **Lancaster Directory for 1843**, p. 43.
- 87 Lancaster Borough Assessment, 1814. The chair was a small two-wheeled vehicle. **Lancaster Journal**, April 21, 1798.
- 88 Lancaster Borough Assessment, 1814.
- 89 **Lancaster Journal**, Aug. 20, 1819.
- 90 Pownall, **The Remembrancer**, 1777, p. 488.
- 91 Royall, **Pennsylvania**, I, 172; **Lancaster Examiner**, Sept. 20, 1832; **Intelligencer and Journal**, Aug. 3, 1841; Hazard, **Register**, XII, 67.
- 92 **Lancaster Examiner**, Sept. 20, 1832.
- 93 Coxe, **Arts and Manufactures**, p. 60; **Compendium of Sixth Census**, p. 140.
- 94 **Pennsylvania Archives**, XVII, 454-465.
- 95 Coxe, **Arts and Manufactures**, p. 161.
- 96 Lancaster Borough Assessment, 1814; Hazard, **Register**, V, 256.
- 97 **Intelligencer and Journal**, March 1, 1842. See also, **Lancaster Intelligencer**, Feb. 20, 1838.
- 98 **Lancaster Intelligencer**, June 11, 1839.
- 99 Lewis Evans, in Gipson, **Lewis Evans**, p. 103; J. H. Bryson, **Lancaster Directory for 1843**, p. 37; **Lancaster Intelligencer**, Feb. 20, 1838.
- 100 **Lancaster Journal**, May 13, 1796; **Intelligencer, and Weekly Advertiser**, Oct. 30, 1799; Sept. 10, 17, 1800.
- 101 **Lancaster Intelligencer**, June 11, 1839; J. H. Bryson, **Lancaster Directory for 1843**, p. 37.
- 102 Carl W. Drepperd, **L.C.H.S. Papers**, XLIX, 131-139.
- 103 Lancaster County Taxables, 1800. See Chapter II for other agricultural tool manufactures.
- 104 Lancaster Borough Assessment, 1814.
- 105 **Lancaster Intelligencer**, May 19, 1829. It is difficult to picture a wooden jackscrew, and the possibility that this was an iron tool must be recognized.
- 106 Lancaster County Taxables, 1800.

## CHAPTER VI

### RIFLES AND OTHER FIREARMS

*There are several private manufacturies in Lancaster . . . but it is principally noted for its rifles, muskets, and pistols, the first of which are esteemed the best made in the United States.* (Fortescue Cuming, 1807, in Thwaites, *Early Western Travels*, 1748-1846, IV, 31)

The rifled gun has been an important formative influence in American history. It aided materially in the conquest of the wilderness as the frontier moved westward and, beginning with the late Colonial period, played a deadly part in military affairs. Since Lancaster County was one of the most important centers of rifle making in the country in the eighteenth and early nineteenth centuries, special attention will be devoted to this particular shop industry, including the manufacture of other small arms as well.<sup>1</sup>

Rifles produced in the vicinity of Lancaster in the eighteenth century were not completely indigenous to these shores. Their progenitors were the hunting rifles developed in Europe in the region of Switzerland and the Upper Rhine. These were heavy, large of bore, badly sighted, and poorly adapted for use in the American environment. Pioneer conditions in this country demanded an accurate long-range weapon which conserved powder and shot, both of which had to be carried for long distances and extended periods. The sound of loading and of the explosion had to be reduced to a minimum so that the gunner would not unduly betray his presence. Weight was an important consideration, for the gun had to be carried on long journeys, and speedy repetition of fire was essential if the rifle were to match the Indian bow.

The changes implied did not all occur at once; but they were embodied in a new type of weapon which evolved in the course of the eighteenth century and which came to be known as the Kentucky Rifle, although some prefer to think of it as the American, or Pennsylvania, or Lancaster Rifle.<sup>2</sup> The origin of the name, Kentucky Rifle, is obscure. This name, however, was used as early as the period of the War of 1812, as is revealed by the following lines from stanza five of a long ballad commemorating Jackson's victory at New Orleans and entitled, "The Hunters of Kentucky; or The Battle of New Orleans":

But Jackson he was wide awake,  
And wasn't scared at trifles,  
For well he knew what aim we take  
With our Kentucky rifles. (3)

It has been pointed out that the American Rifle is an exception to the generalization that the arts and crafts declined in the colonies because of the corrosive effect of the wilderness upon the skilled worker. Instead of representing a recession from Old World standards of quality and beauty, this famous arm was a marked improvement upon them.<sup>4</sup> Designed with a view to practicality, it was at the

same time made a work of art by versatile craftsmen skilled in the use of both metal and wood.

As the new arm came into being, it had certain distinguishing characteristics. While not all of these were American innovations, the net result of the skillful blending and proportioning of things new and old was a small arms weapon which signalized a revolution in design and efficiency. One of the most important of these was the fluted or rifled barrel which imparted a spiral motion to the ball.<sup>5</sup> Another was the patch box let into the right side of the stock. In this box the gunner carried the small bits of greased buckskin or linen rag which made such an essential contribution to the speed and efficiency of the loading operation. The ball, smaller in calibre than the bore of the gun, was placed upon the greased patch at the muzzle and shoved home upon the powder charge with a hickory ramrod. In the barrel the patch engaged the rifling, prevented the powder from escaping around the ball, and served as a cleaning swab. This method of loading eliminated the slow, laborious task of hammering a ball larger than the bore down a barrel which quickly fouled from the powder charges.

The typical early American Rifles were flintlocks about five feet in length, with octagonal barrels of forty to fifty inches and precision sights. Stocks, generally of curly maple, extended the full length of the barrels. Hickory ramrods were socketed below the forestocks, and mountings were of brass. Time brought about departures from this early pattern, such as shorter barrels, half stocks, and percussion locks. Since the arms were generally made by individual smiths, usually from specifications supplied by prospective owners, there tended to be considerable variation in detail, no two rifles being exact duplicates.

A late eighteenth century traveler has provided an interesting description of these guns as they appeared to a contemporary. He wrote:

The rifled barrel guns, commonly used in America, are nearly of the length of a musket, and carry leaden balls from the size of thirty to sixty in the pound. Some hunters prefer those of a small bore, because they require but little ammunition; others prefer such as have a wide bore, because the wound which they inflict is more certainly attended with death; the wound, however, made by a ball discharged from one of these guns, is always very dangerous. The inside of the barrel is fluted, and the grooves run in a spiral direction from one end of the barrel to the other, consequently when the ball comes out it has a whirling motion around its own axis, at the same time that it moves forward, and when it enters into the body of an animal, it tears up the flesh in a dreadful manner. The best of powder is chosen for a rifle barrel gun, and after a proper portion of it is put down the barrel, the ball is inclosed in a small bit of linen rag, well greased at the outside, and then forced down with a thick ramrod. The grease and the bits of rag, which are called patches, are carried in a little box at the butt-end of the gun. The best rifles are furnished with two triggers, one of which being first pulled sets the other, that is, alters the spring, so that it will yield even to the slight touch of a feather. They are also furnished with double sights along the barrel, as fine as those of a surveying instrument. An experienced marksman with one of these guns, will hit an object not larger than a crown piece, to a certainty, at the distance of one hundred yards . . . Were I, however, to tell you all the stories I have heard of the performances of riflemen, you would think the people were most abominably addicted to lying. A rifle gun will not carry shot, nor will it carry a ball much farther than one hundred yards with certainty. (6)

Except for his error in implying that the tearing power of the ball was due to its spiral motion, our traveler has correctly grasped the implications of the American Rifle.

Many of the early settlers in Lancaster County came from the only part of Europe where rifles were made and used to any extent in the eighteenth century. It is not surprising, therefore, that the rifle maker's craft was transplanted into the American environment at an early date or that Lancaster County soon became an important rifle making center. In the small group of Swiss-Palatine Mennonites who made the first settlement in Lancaster County in 1710 was Martin Mylin to whom tradition and some other lines of evidence point as the first gunsmith of the county.<sup>7</sup> When he died in 1749, Mylin willed his three tracts of land in Lampeter Township to his son who was also named Martin.<sup>8</sup> In 1751 this second Martin Mylin died intestate, and his inventory sheds the first clear ray of light into the obscurity of Lancaster County gunsmithing in the early century.<sup>9</sup> He definitely owned a gunshop, for the inventory entries include sundry tools, quantities of iron and steel, gunlocks, gunstocks, and boards for making gunstocks. Of special interest is an entry for rifle tools. This inventory proves conclusively that the gunsmith's craft was practiced in Lancaster County before 1751 and that some of the guns made were rifles. As the earliest authenticated instance of barrel rifling in that part of Pennsylvania where students of rifle history believe the American Rifle was born, it lends some credence to the claims that this particular county was the birthplace of the noted arm.

The picture of the development of the small arms industry in Lancaster County becomes clearer before the close of the 1750's. A manufactory of guns was one of the things which caught Pownall's attention when he came to Lancaster in 1754.<sup>10</sup> Joshua Baker who styled himself a gunsmith died in the borough that same year,<sup>11</sup> while Jacob Dickert, who advertised in 1795 that he had had forty years of gunsmith experience, took up residence in Lancaster in 1756.<sup>12</sup> These data show that gunsmithing had reached at least modest proportions in Lancaster County by the 1750's, from which the inference may be drawn that its beginnings there occurred in the earlier years of the eighteenth century.<sup>13</sup>

Once established in Lancaster County and in other places, the rifle industry experienced rapid growth. Prior to the Revolution, the rifle makers already supplied this weapon in sufficient quantities to bring it into general use among the inhabitants of Pennsylvania, and the adjoining states of Maryland and Virginia. It was to this region that the Continental Congress turned for riflemen when armed conflict began in 1775. The following resolution was passed:

**Resolved, That six companies of expert riflemen (sic), be immediately raised in Pennsylvania, two in Maryland, and two in Virginia; that each company consist of a captain, three lieutenants, four serjeants, four corporals, a drummer or trumpeter, and sixty-eight privates.**

**That each company, as soon as compleated (sic) march and join the army near Boston, to be there employed as light infantry, under the command of the chief Officer in that army. (14)**

A short time later Congress called for two more rifle companies from Pennsylvania, making eight Pennsylvania companies in all with a total of nearly 650 men<sup>15</sup> Lancaster exceeded its quota and raised two companies instead of one, to which

Congress responded by voting to take both into the Continental service.<sup>16</sup>

The existence of arms industries in Lancaster County at the time of the Revolution made that place a patriot arsenal, and a flood of orders poured into the gunshops. In the spring of 1776, the Committee of Safety in Philadelphia requested 300 rifles from the county gunsmiths.<sup>17</sup> Later the Committee authorized various officers to purchase rifles in Lancaster County in lots ranging from forty to 160.<sup>18</sup> William Henry was an important rifle maker at this time, and employees of his gun works were excused from military service by the Supreme Executive Council on condition that they would continue making arms in his employ.<sup>19</sup> Henry's correspondence during the years from 1777 to 1779 reveals the constant demands made upon him for the manufacture and repair of Continental arms.<sup>20</sup>

As a result of the sharp increase in the demand for weapons at the time of the Revolution, the Lancaster County gunsmiths expanded productive facilities. Thus in 1775 when the Committee of Safety in Philadelphia asked Joel Ferree of Leacock Township for patterns and an estimate of the number of guns he could supply, he first thought in terms of fifteen or twenty per week.<sup>21</sup> Upon further consideration he decided to expand his works, and wrote as follows:

**I was of opinion then to have been able to provide 15 or perhaps 20 per week, but as I am determined to use my endeavors to promote the Business and serve my Country in the common Cause, I am about to enlarge my works in so extensive a Manner as to turn out between 30 & 40 weekly. My Diligence in the Affair shall be as quick as possible. (22)**

The output of the Lancaster County gunshops during the Revolution was not confined to rifles, but included muskets, bayonets, steel rammers, and firelocks.<sup>23</sup> From time to time provincial funds in amounts such as 300 pounds and 1,000 pounds were appropriated for the payment of these items.<sup>24</sup> The gunsmiths were sometimes unwilling or reluctant to work on the terms offered to them. Thus in 1775 any who refused to make muskets and bayonets for the Continental cause were threatened with penalties such as confiscation of their tools or prohibition of their trade until they completed the arms.<sup>25</sup> Then as now, contracts might give rise to controversy. In 1776 the Lancaster gunsmiths complained that their contract to supply 600 muskets, bayonets, and steel rammers did not allow them a sufficient price. They insisted that the sacrifice involved in quitting their rifle business was greater than they could well bear without some reasonable equivalent. Tangible evidence of this dissatisfaction is seen in the fact that only 200 of the 600 muskets were completed at the end of the contract period.<sup>26</sup> While the attitude of the gunsmiths may reflect some tendency to profiteer, or at least to sell their arms to good advantage, it should be remembered that they were facing the problem of the depreciating Continental currency with its inflationary effect upon the cost of living. This, coupled with the reluctance of the authorities to increase the price of arms, and the difficulties of collecting for work completed, dampened enthusiasm for work on the government contracts.<sup>27</sup>

The question naturally arises as to why so many muskets were made for the Revolutionary forces, in view of the marked superiority of the rifle in accuracy and destructiveness of fire. One simple answer is that muskets could be made more cheaply and quickly. Another reason is that the effective use of the rifle as a pre-

cision instrument required much more extensive training and experience and, on the whole, a higher mentality, than were required for the use of the musket. Furthermore, military tradition, like many other types, changes slowly. Except for the riflemen of the frontier, the colonials were not familiar with the rifle nor were they emancipated from the military thought of the European continent. There the typical foot soldier carried a bayoneted musket which he leveled and discharged in volley with his comrades with little or no attention to aim. He then proceeded to the main business of combat which was the wielding of the bayonet. For this purpose the cheap and sturdy American musket served equally as well as the more expensive and ornate American rifle.

The record of the American Rifle and its Lancaster County makers during the Revolution did not pass entirely unnoticed by those later responsible for the military establishment of the United States. Toward the close of the eighteenth century, the Lancaster gunsmiths were busily at work on rifle contracts for the National Government. A visitor to the town in 1794 wrote:

**The only manufactory in Lancaster is one of rifles; they have contracted to supply the continental army with these "mortal engines." (28)**

This item must be interpreted against the background of the fact that there were relatively few riflemen among the Federal forces at this time, for muskets were always the mainstay of Federal small arms ordnance prior to the Civil War.<sup>29</sup> During the 1790's, however, and the early nineteenth century, the Lancaster County gunsmiths made large quantities of rifles for the United States, many of which were distributed through the Indian Department to friendly Indian tribes.<sup>30</sup> This picture emerges clearly from the correspondence between the gunsmiths and the Purveyor's Office, of which the following is an example:<sup>31</sup>

**Purveyor's Office  
Phila., Sept. 6, 1803**

**Mr. Peter Gonter  
Rifle Maker, Lancaster  
Sir:**

**I want for the public use of the U. S. six rifles with Silver Star and Thumbpieces and 42 common rifles to be delivered here as quick as possible. A vessel sails for Georgia on Saturday or Sunday in which I wish to send them . . . There is another order for 50 rifles which I wish to procure from our Penna. makers. Will you speak to Mr. Dickert, Mr. Getz and others and let me know what terms you and they will supply them on, and if you can send the 50 immediately. They are of the common kind, not silvered.**

**I am, Sir,  
Tench Coxe**

A few weeks later Coxe again wrote to Gonter about this or another order: "I will thank you to deliver to the order of Genl. William Irvine the cases of rifles for the Chicasau Indian Factory."<sup>32</sup> Thus many American Indians became the happy and proud possessors of American Rifles which originated in Lancaster County.

Some of the rifle contracts were much larger than any so far mentioned. On December 9, 1807, Henry DeHuff, Peter Gonter, and Jacob Dickert contracted jointly to supply 600 rifles at ten dollars each within six months.<sup>33</sup> Large government contracts like this were not made with the thought that all of the rifles

would be manufactured in the shops of the contractors themselves. It was expected that notice of the contract would be given to the other gunsmiths of the locality who would thus have an opportunity to help supply the arms. Failure on the part of the contractors to give sufficient notice to their fellow craftsmen was regarded as an unethical procedure and grounds for complaint to the Purveyor's Office. This method of contracting relieved the Government from the necessity of tedious contract negotiations with many individual craftsmen. In 1811 there were two combinations of Lancaster County gunsmiths which did most of the contracting. One was made up of Abraham Henry, John Guest, and Peter Brong, and the other Jacob Dickert, Henry DeHuff, and Peter Gonter.<sup>34</sup> In addition to rifles, the Lancaster gunsmiths manufactured many hundreds of pistols for the United States in this period most of which were intended as cavalry ordnance. Thus on December 9, 1807, Abraham Henry contracted to supply 200 rifles at ten dollars each and 200 pairs of pistols at ten dollars a pair.<sup>35</sup>

Toward the close of the decade of the 1790's another lucrative line of business opened for the Lancaster County gunsmiths. In the atmosphere of tension created by the bitter French reaction to the Jay Treaty, the Commonwealth of Pennsylvania embarked upon a feverish preparedness program which called for 20,000 muskets, of which 10,000 were to be of domestic manufacture.<sup>36</sup> Acting on behalf of the Commonwealth, the governor entered into contracts with various gunsmiths, including John Fondersmith, Jacob Dickert, Matthew Llewellyn, Henry DeHuff, Peter Brong, and other Lancaster County craftsmen.<sup>37</sup> Manufacturing specifications were written into the contracts which stated that the arms were to be:

. . . of the fashion or pattern of the French Charleville Musquet, and of the dimensions following, to wit: — the length of each barrel to be three feet eight inches, and to receive a ball of the size of eighteen to the pound; each barrel to undergo the same degree of proof as is now in use for the proof on those made for the service of the United States, and be stamped or marked near the breech with the letters C P. the locks to be upon the best construction, double bridled on a flat plate and marked with the letters aforesaid; the mounting Iron with bands and swivels, and spring to each band; the ramrods to be of well tempered steel; the bayonets to be fifteen inches in the blade made of steel well tempered and polished; the stock to be of well seasoned walnut; the length of the butt of the Musquet to be fifteen and a half inches from the breech end of the barrel to the heel plate; the side pins, the breech pins and trigger to be case hardened; the weight of the Musquet and Bayonet thus completed not to exceed eleven pounds . . . (38)

The 1797 decision to arm the Pennsylvania militia with muskets indicates that the factors militating against the general introduction of the rifle as a military weapon were operating strongly even in the state where rifles were in general use in the inland districts. These musket contracts were of various sizes, ranging from 100 to 2,000 stands. Considering the large amount of hand labor required to manufacture a gun in those days, these were large orders which tremendously stimulated the arms industry. Abraham Henry and Henry Graeff jointly had one of the largest contracts. They agreed to supply 2,000 stands of arms at \$13.33 per stand, the total price thus exceeding \$26,000. Their contract is of special interest because, agreeable to the order of the governor, sixty rifles at \$16.00 each were included as part of the 2,000 stands.<sup>39</sup> This provides an idea of the rela-



tive costs of muskets and rifles at the time, and shows that at least a few of the more efficient weapons found their way into the state arsenals.

As was the case with the orders for Federal arms, the profits of these state contracts flowed out beyond the actual circle of the contractors to stimulate the gun industry generally. Sub-contracts were let for parts such as locks and barrels.<sup>40</sup> How the profit sharing process worked is also illustrated in the case of Peter Brong who in April, 1801, contracted with Governor McKean to supply 500 muskets at \$11.00 per stand.<sup>41</sup> Later he advertised that he would pay twenty shillings cash for every musket-barrel which was proven and of the size directed by law, nineteen shillings cash for each good musket-lock, and the highest price for walnut plank stockwood. He also offered good encouragement to lock-filers.<sup>42</sup> Thus it is clear that shops like Brong's not only manufactured parts, but also assembled arms from parts manufactured by other gunsmiths. The \$11.00 per stand paid for Brong's muskets represents a sharp price decline from the \$13.33 per stand paid under the earlier contracts and presumably reflects the passing of the French crisis.

During the early decades of the nineteenth century, the gun industry continued to play a prominent part in the economic life of Lancaster County. Sixteen gunshops manufactured about 1,000 stands in 1810. Rifle making was the chief branch of the industry at the time, accounting for about eighty per cent of the arms produced.<sup>43</sup> While an occasional gunshop was located outside of Lancaster, the craft was concentrated in the town where gunsmiths and gunlocksmiths numbered twenty-four in 1814.<sup>44</sup> The period from 1810 to 1840 was one of vast expansion for the gun industry with annual production figures leaping from about 1,000 to more than 4,500 stands.<sup>45</sup> Among the factors which stimulated the market for weapons during these decades were the War of 1812 and its nationalistic aftermath, the Westward Movement, the Indian trade, and the continuation of the United States policy of distributing arms to friendly Indians.

One of the most famous of the later Lancaster County gun makers was Henry E. Leman who began his career near the close of the period of this study. His operations were conducted on a large scale and represent the factory stage of production in the local arms industry. The extent and variety of these operations are revealed in his 1839 advertisement that he had several hundred rifles in stock, also double and single barrel shotguns, Armstrong duelling pistols, and rifle barrels.<sup>46</sup> A few years later he advertised Northwest Indian guns which were flintlock smooth-bores, walnut or maple stocked, with relatively short barrels.<sup>47</sup> Another indication of the large production of Leman's gun works is his purchase of walnut gunstock plank in lots of from one to two thousand feet.<sup>48</sup> Leman rifles were sold far and wide. Unique testimony to the esteem in which they were held by the Plains Indians is given by Frank R. Diffenderffer in the following passage:

Between 1857 and 1870 I was engaged in trade . . . making trips across the plains from Missouri to Mexico and also from the Gulf of Mexico into Arizona. During that time it was my fortune to meet many tribes of Indians, Apaches, Navajos, Comanches, Cheyenees, Kaws and Arapahoes and most of them carried guns as well as bows and arrows. When occasion offered I took pains to look at the names of the makers, stamped on the weapons. By far the largest number were Leman rifles, and inquiry

always revealed the preference of these Indians for the Lancaster made guns over all others. It was possible to barter with the Indians for almost any of their possessions, but never for a Leman rifle. (49)

Henry E. Leman's rifles were not the first Lancaster-made weapons to attain fame and wide distribution. By the close of the eighteenth century the armourers of the locality already had a long and distinguished record of fine rifle craftsmanship second to none in the United States. Their arms were highly esteemed on the frontier and were sent to every part of the country.<sup>50</sup> Lancaster County rifle makers of the early nineteenth century, therefore, fell heir to a famous tradition, and they did it justice.



Henry Leman's Boring Mill located along Conestoga Creek opposite Pine-town (near Catfish, or Oregon). Forging, welding, planing and boring of rifle barrels were done here from the mid-1830's until 1850 when operations were moved to Lancaster and were powered by steam.

M. Luther Heisey Collection

The early gunsmiths manufactured and assembled all parts of the arms in their own shops, but a measure of specialization is apparent with the passage of time. Some craftsmen concentrated upon gunlocks or firing mechanisms. Thus Daniel Sweitzer and Company announced the beginning of a gunlock manufactory in Lancaster in 1808, where they made and repaired: "Musket locks, Rifle do. with single and double rollers, also plain Gun and Pistol locks, in the best and neatest manner, and on reasonable terms."<sup>51</sup> Other gunsmiths operated boring mills and specialized on barrel work. Nearby York County provides an interesting example of barrel specialization dating from the latter part of the eighteenth century. The boring mill in question served a dozen gunsmiths in the town of York. It was housed in a small rectangular building with water power facilities, which was

located about a mile outside of the town on the turnpike leading to Baltimore.<sup>52</sup> An occasional boring mill was also found in Lancaster County by the time of the Revolution.<sup>53</sup> One such establishment bored 1,670 barrels in 1810.<sup>54</sup> Craftsmen who made gun barrels did not necessarily confine themselves to this one line of production. Henry E. Leman who made all kinds of arms on a large scale also manufactured rifle barrels for the use of other craftsmen.<sup>55</sup>

The small arms industry of Lancaster County grew from humble beginnings in the early eighteenth century to national importance by the time of the Revolution and thereafter supplied large quantities of weapons for public and private use. These weapons included the superb American Rifles which, distributed far and wide, made the Lancaster community famous as a center of fine gun craftsmanship. In support of the claim that the American Rifle was born in this locality, the county can offer the earliest authenticated instance of barrel rifling in southeastern Pennsylvania, evidence of an important rifle industry at the time of the Revolution, and an eighteenth century reputation as the source of the finest specimens of these guns. During the period of this study, other Lancaster County manufactures employed more men and required large investments, but few, if any, influenced the course of American history more profoundly than did the manufacture of firearms, especially rifles.

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## NOTES

<sup>1</sup> For the general background and contributions of the American Rifle, see the following works: C. W. Sawyer, *Firearms in American History, 1600-1800*; Major Townsend Whelen, *The American Rifle*; J. G. W. Dillin, *The Kentucky Rifle*.

<sup>2</sup> Since the arm in question was designed to meet the requirements of the American environment, and made its contribution throughout the country generally, the writer is inclined to the view that the name, American Rifle, is more in accord with correct historical perspective than any name which stresses a particular locality where the gun was made or used.

<sup>3</sup> This entire ballad is printed in Joe Kindig, Jr., "The Pedigree of the Pennsylvania Rifle," *The Magazine Antiques*, XXII, 101-104.

<sup>4</sup> Carl Bridenbaugh, *The Colonial Craftsman*, p. 117.

<sup>5</sup> Smooth bores which in external appearances closely resemble the American Rifles are loosely classified with them. J. G. W. Dillin, *The Kentucky Rifle*, p. 39.

<sup>6</sup> Isaac Weld, Jr., *Travels Through the States of North America*, I, 117-119.

<sup>7</sup> H. H. Beck, "Martin Meylin, a Progenitor of the Pennsylvania Rifle," *L.C.H.S. Papers*, LIII, 33-63. While admitting the weight of some of the evidence presented in Dr. Beck's paper, the present writer is not convinced that the first Martin Mylin has been proved a gunsmith beyond reasonable doubt.

<sup>8</sup> Will Book A, vol. 1, p. 185.

<sup>9</sup> Martin Mylin (sic) Inventory, 1751, Office of Lancaster County Register of Wills. Lacking further proof, undocumented gunsmith lists including Lancaster County gunmakers before 1750 must be regarded with considerable skepticism. See such lists in Sawyer and Dillin.

<sup>10</sup> Pownall, *The Remembrancer*, 1777, p. 488.

<sup>11</sup> Will Book B, vol. 1, p. 57.

<sup>12</sup> *Lancaster Journal*, July 1, 1795; Burial Records. Moravian Church of Lancaster.

<sup>13</sup> One Lancaster County historian, writing in 1844, asserts that the first Martin Mylin erected a gun barrel boring mill in the county as early as 1719, but no authority is cited. I. D. Rupp, *History of Lancaster County*, pp. 74-75.

- <sup>14</sup> **Journals of the Continental Congress**, June 14, 1775.
- <sup>15</sup> **Ibid.**, June 22, 1775.
- <sup>16</sup> **Ibid.**, July 11, 1775.
- <sup>17</sup> **Colonial Records**, X, 530.
- <sup>18</sup> **Ibid.** X, 598, 651, 688.
- <sup>19</sup> **Ibid.**, X, 523, XI, 380, 422-423.
- <sup>20</sup> Printed in Francis Jordan, Jr., **The Life of William Henry**, chap. 12.
- <sup>21</sup> **Colonial Records**, X, 290.
- <sup>22</sup> **Pennsylvania Archives**, 2nd Series, I, 543.
- <sup>23</sup> **Ibid.**, 1st Series, IV, 717-718; **Colonial Records**, X, 606.
- <sup>24</sup> **Colonial Records**, X, 606. See also, **Ibid.**, X, 520.
- <sup>25</sup> **Revolutionary Papers**, vol. 1a, Jan.-Dec., 1775, p. 59.
- <sup>26</sup> **Pennsylvania Archives**, 1st Series, IV, 717-718.
- <sup>27</sup> **Ibid.**, 2nd Series, XIII, 510, 511, 519, 521, 523.
- <sup>28</sup> William Priest, **Travels in the United States of America Commencing in the Year 1793 and Ending in 1797**, p. 59. This writer either defined manufacturing in a very arbitrary way, or else he erred seriously in stating that the only manufactory in Lancaster at that time was one of rifles.
- <sup>29</sup> **Illustrated Catalogue of United States Cartridge Company's Collection of Firearms**, pp. 83, 91.
- <sup>30</sup> James E. Hicks, **Notes on United States Ordnance**, I, 14, II, chap. 6.
- <sup>31</sup> **Ibid.**, II, 88.
- <sup>32</sup> **Ibid.**, II, 89.
- <sup>33</sup> **Ibid.**, I, 14.
- <sup>34</sup> **Ibid.**, II, chap. 6.
- <sup>35</sup> **Ibid.**, I, 30.
- <sup>36</sup> **Statutes at Large of the State of Pennsylvania**, 1700-1809, compiled by James T. Mitchel, et.al., XV, chap. MCMXL; passed March 28, 1797, pp. 524-527. Thomas and John Ketlands contracted to import the 10,000 foreign arms from Great Britain, but the British Government refused permission. Governor Thomas McKean Papers, 1799-1808, XII.
- <sup>37</sup> Governor Thomas McKean Papers, 1799-1808, XII-XVI, *passim*.
- <sup>38</sup> From John Fondersmith's contract to supply 500 stands of arms, April 16, 1801. Governor Thomas McKean Papers, 1799-1808, VI.
- <sup>39</sup> Governor Thomas McKean Papers, 1799-1808, XII.
- <sup>40</sup> **Lancaster Journal**, Aug. 21, 1799.
- <sup>41</sup> Governor Thomas McKean Papers, 1799-1808, XIII.
- <sup>42</sup> **Intelligencer, and Weekly Advertiser**, Sept. 23, 1801.
- <sup>43</sup> Coxe, **Arts and Manufactures**, p. 51.
- <sup>44</sup> **Lancaster Borough Assessment**, 1814.
- <sup>45</sup> **Compendium of Sixth Census**, p. 135.
- <sup>46</sup> **Lancaster Intelligencer**, June 11, 1839.
- <sup>47</sup> J. H. Bryson, **Lancaster Directory for 1843**, p. 48; J. E. Parsons, "Gun-makers of the American Fur Company," **New York Hist. Soc. Quarterly**, XXXVI, 187-193.
- <sup>48</sup> **Intelligencer and Journal**, March 1, 1842.
- <sup>49</sup> F. R. Diffenderffer, **L.C.H.S. Papers**, IX, 73.
- <sup>50</sup> Isaac Weld, Jr., **Travels Through the States of North America**, I, 117; F. A. Michaux, in Thwaites, **Early Western Travels, 1748-1846**, III, 135; Fortescue Cuming, in **Ibid.**, IV, 31; Thomas Ash, **Travels in America**, p. 12; **House Report No. 168**, 25th Cong. 3rd Sess.
- <sup>51</sup> **Lancaster Journal**, Sept. 2, 1808.
- <sup>52</sup> Lewis Miller, **Chronicles of York, 1790-1870**, Book A.
- <sup>53</sup> **Deed Book S**, pp. 514-516; Coxe, **View**, p. 313.
- <sup>54</sup> Coxe, **Arts and Manufactures**, p. 51. See also, **Lancaster Journal**, May 13, 1816.
- <sup>55</sup> **Lancaster Intelligencer**, June 11, 1839.

## CHAPTER VII

### TEXTILE INDUSTRIES

*Stephen Atkinson appeared this Day before the House . . . to offer his Reasons why the Petitioners of Lancaster County ought not to be admitted to bring in a Bill for removing a certain Dam which the said Stephen had erected across Conestoga Creek, within the said County . . . And the said Stephen being admonished by Mr. Speaker, that he was at Liberty to offer his Objections, if any he had, touching the Matter aforesaid; and said Stephen in humble Manner represented to the House, That the principal Use of the Dam was to supply Water to a Fulling-Mill, which, at the general Request and Invitation of the Inhabitants, and at considerable Expense, he had erected on the said Creek . . .*

Votes of the Assembly, 1731

Most of the textiles used in the colonies were manufactured in the homes of the inhabitants. Wool, hemp, and flax constituted the chief raw materials, but some imported cotton was also used. Much of the labor required by the home production of cloth was performed by women and children, with the men assisting in the heavier tasks such as weaving and fulling. Cloth manufacture was not only an important branch of early home industry, but it was one of the most persistent as well. Soon after new settlements were made, many of the tasks of the home were surrendered to outside establishments such as gristmills, sawmills, tanneries, and various handicraft shops. The home textile industry, however, which depended in such a large measure upon the labor of the housewives, was on the whole an agreeable and profitable line of home production. As a result, it tended to resist the development of a professional spinning handicraft, although it yielded readily to others like fulling, which offered release from the heavier and more technical processes of cloth manufacture. The gradual modification and decline of the home textile industry in Lancaster County constitutes the logical integrating theme for the present chapter.

A letter written by William Atlee, a prominent inhabitant of the town of Lancaster in 1770, provides the first clear description of the household textile industry in that place.<sup>1</sup> The homespun produced there from May 1, 1769, to May 1, 1770, amounted to about 27,739 yards distributed as follows:

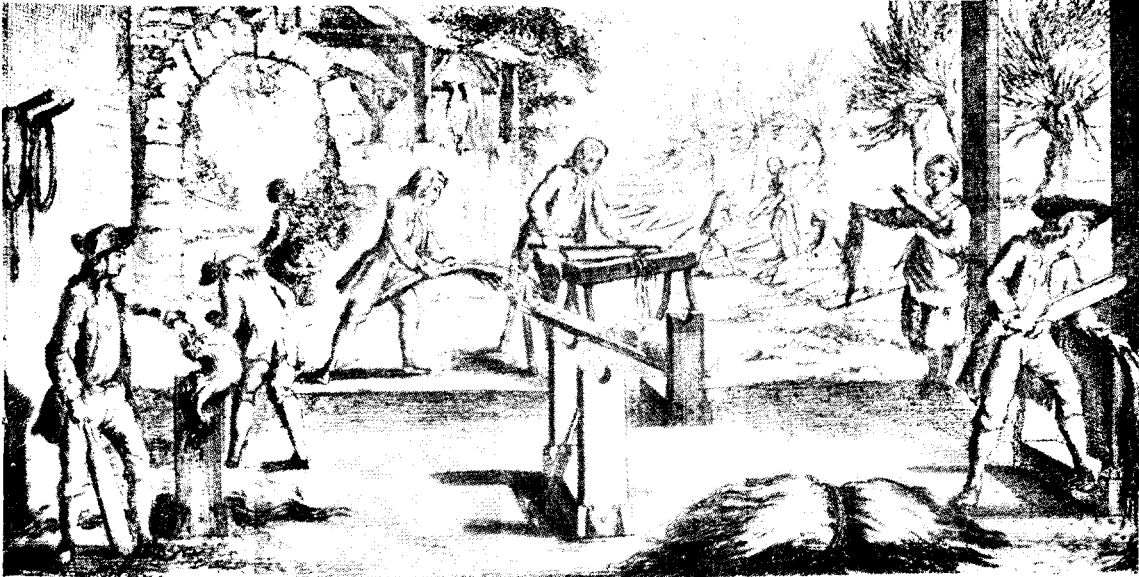
8,877	hemp linen
4,232	tow linen
4,091	flax linen
3,744	striped cotton
1,394	linsey
1,060	check linen
1,058	diaper
899	sheeting
836	bedtick
596	fustian, wilton and such clothing
543	woolen and worsted clothing
288	blanketing and coverlids
121	curtains

Stuffs at the looms at the time these data were collected amounted to an additional 6,000 or 7,000 yards, and yarn in the homes ready to be sent to the weavers was sufficient for several thousand yards more. Many persons refused to make a return of the amount spun for fear of taxation, and the list is therefore an understatement. Since the number of families in the town of Lancaster in 1770 did not exceed 700 at the most, it may be assumed that the average annual cloth production was at least fifty yards per family at that time.<sup>2</sup> One housewife who had the care of both a family and one of the best public houses in the Province, alone accounted for more than 600 yards on the list. Linen, which was woven from both flax and hemp, was the leading fabric produced in the town in 1770. The amount of cotton cloth manufactured at that early date is rather surprising, especially when it is compared with the smaller production of woolens.<sup>3</sup>

Atlee made no actual count of Lancaster looms in 1770, but he inquired among the weavers and concluded that about thirty to forty men were engaged in that craft and that fifty looms were constantly employed. This estimate of the number of weavers seems a little high, for there were only fifteen weavers and eight stocking weavers on the Lancaster borough tax list in 1773.<sup>4</sup> In 1786 the number of town weavers of woolens, linen, and cotton was twenty-five, or approximately ten per cent of the 234 artisans reported in that year.<sup>5</sup> These figures, and Atlee's 1770 reference to yarn in the homes ready to be sent to the weavers, reveal that before the Revolution many town families had already relinquished the weaving phase of home industry to professional craftsmen.

While linen was the chief fabric produced throughout the county as a whole in the eighteenth century,<sup>6</sup> the production of woolens received more attention than might appear from the 1770 statistics of home cloth manufactures in the town of Lancaster. This is indicated by the numerous flocks of sheep in the area,<sup>7</sup> and by the erection of fulling mills to felt and shrink the woolen fabrics. Stephen Atkinson erected such a mill on the Conestoga Creek between 1724 and 1731,<sup>8</sup> and thereafter fulling mills increased in number throughout the eighteenth and on into the nineteenth century.<sup>9</sup> Only one fulling mill was reported within ten miles of Lancaster in 1786, which shows that most of the county woolens were produced in the rural areas at that time.<sup>10</sup> Fulling in mills erected for that purpose may be regarded as a shop handicraft, and it appears that the inefficient and laborious home fulling processes readily gave way as the facilities of the fulling mill were made available.

Another type of customer establishment, the hemp mill, offered to home manufacturers an alternative to the handwork required to break this fiber plant. These mills with their special conical stones running on wooden planking crushed the hemp stalk so that the linenlike strands could be separated from it. Their erection began before the Revolution, and they increased in number until the decline of linen manufacture toward the close of the period under discussion.<sup>11</sup> Although invariably called hemp mills in the eighteenth century, it is possible that these establishments broke flax as well, for the processing of the two fiber plants was quite similar. The earliest reference to a flax mill as such in the county is dated 1812, at which time a single works dressed flax east of Lancaster, and its proprietor was offered more work than he could do.<sup>12</sup> Nine years later John Cox advertised that he had erected new machinery for breaking and scutching flax in



Working hemp in the late 18th Century. (rear, right) Retting hemp in water. (rear, left) Drying kiln. (center) Removing seeds and breaking hemp. (foreground) Scutching and stripping hemp.

Diderot and d'Alembert's "Encyclopédie"

Strasburg Township near Paradise.<sup>13</sup> The location of his establishment suggests that it may well have been the flax mill reported in 1812.

Coloring or dyeing was another very important process in the manufacture of textiles in the home. The woods and fields supplied many dye substances, but the dyeing process was greatly simplified when commercially prepared coloring materials such as indigo and madder were available. Indigo became the standard dye, and was used in large quantities. A single merchant firm offered 6,000 pounds of Spanish indigo for sale in Lancaster in 1797.<sup>14</sup> Although it provided an outlet for creative craftsmanship, the disagreeable odors associated with the dyeing process made it a rather undesirable activity for the home, and by 1773 professional dyers were found among the artisans in the town of Lancaster.<sup>15</sup> They were commonly called "blue-dyers," no doubt because indigo was the standard color used.<sup>16</sup> That the name does not necessarily imply a specialist in a single color is shown by the following advertisement:

**JACOB MILLER, Blue-Dyer, Informs the Public, that he carries on the BLUE-DYING Business, in all its branches . . .**

**He has an excellent way of preparing and dying the TURKEY-RED, which colour he makes as good as any man in that line in America (17)**

The dyers as specialized artisans are not numerous on the artisan lists of Lancaster County during the period of this study. Dyeing was commonly carried on as a branch of the fulling industry, however, and sometimes in conjunction with other crafts such as weaving.<sup>18</sup> Thus the extent to which dyeing was done outside of the homes in Lancaster County was greater than appears from the number of dyers on the various artisan lists.

Sometimes the coloring was done before the materials were spun, but usually the dye was applied at the yarn or cloth stage.<sup>19</sup> W. Levis, who advertised in Lancaster in 1826 as a silk, cotton, linen, and woolen dyer, worked with all colors and stressed the fact that he was prepared to handle clothing articles, such as dresses, coats, and shawls.<sup>20</sup> Such articles, of course, required re-dyeing operations. The

assortment of imported color materials from which Levis and his fellow craftsmen could select was large. Thus J. F. Heinitsh, a Lancaster supplier of dye stuffs, announced in 1832 that he had on hand twenty barrels of chipped and ground "Logwood, Fustic, Nicaragua, Brazil, Bar wood, Saunders, Camwood, Barberry root;" as well as various other substances.<sup>21</sup> Indigo was largely used and madder was available.<sup>22</sup>

The county-wide textile industry reached large proportions in the early nineteenth century, and Lancaster's active cloth artisans had numerous fellow craftsmen outside of the town. In 1800 the list of county taxables, exclusive of the borough, included 160 weavers and stocking weavers, five dyers, ten fullers, two hemp hecklers, and one hemp miller.<sup>23</sup> Stocking weaving, the only important eighteenth century weaving specialty, was well established in the town of Lancaster at least as early as 1773.<sup>24</sup> Other forms of weaving specialization were in evidence in the early nineteenth century when John Sheibley advertised the coverlet and diaper-weaving business in all its branches, and John Kirshner styled himself a lace and fringe weaver.<sup>25</sup> John Koch and John Keller operated a blanket weaving factory and dye house in Columbia in 1819.<sup>26</sup>

In contrast to weaving which was to a considerable extent in the hands of professional craftsmen by the early nineteenth century, spinning was almost entirely a home operation at that time.<sup>27</sup> Only a single instance of a custom spinning service in Lancaster County in the eighteenth century has been found. This was offered in both wool and cotton by the Moravian Sisters' House in Lititz in 1787.<sup>28</sup> The beginnings of new spinning wheel manufactories in 1811 in Strasburg and Lampeter Townships reflect the continuing importance of spinning as a home operation in the early nineteenth century.<sup>29</sup>

Data on the entire county cloth industry were gathered for the first time in 1810. The annual production of textiles at that time was about 234,000 yards valued at approximately \$152,000. Nearly all of this was homespun, although some of the cotton was of mill manufacture. The distribution was as follows:

Flaxen cloth .....	106,482 yards
Mixed cloth and hempen .....	71,214 "
Woolen cloth .....	32,749 "
Cotton goods .....	23,336 "

This table shows that linen was by far the most important branch of the county cloth industry in the early nineteenth century. In contrast with the situation in the borough of Lancaster in 1770, flax rather than hemp was the leading linen raw material in 1810. More yards were made from flax than from cotton and wool combined. Both of the latter branches were important, however, with woolen production exceeding cotton by more than 9,000 yards. In addition to the cloths already mentioned, 533 yards of carpeting and coverlets were made during the year reported by the census. The looms numbered 841, or one for about every sixty-four persons in the population, while the spinning wheels numbered 12,436, or one for about every four or five county residents.<sup>30</sup>

It is evident that by 1810 much progress had been made toward the shop stage in the Lancaster County cloth industries. Fulling was one of the first textile manufacturing processes to be relinquished by the home. In the first decade of



the nineteenth century, other processes such as hemp breaking, dyeing, and weaving were to a considerable extent in the hands of professional craftsmen. Spinning, however, was still confined almost entirely to the home, while carding was just beginning to shift from a household to a shop or small factory operation. The local sources throw little light upon the itinerant craftsman stage which commonly marked the transition of textile manufacturing processes from home to shop, but it may be assumed that the traveling artisan played his part in the economic life of the area.<sup>31</sup>

The year 1810 may be taken as marking the approximate beginning of an important new era in the Lancaster County textile industries. Foreign relations, as reflected in Jefferson's Embargo, the Non-intercourse Act, and the War of 1812 were an important factor in promoting the economic changes which occurred in this period. Thus in the early part of 1809, the crisis in foreign trade stimulated patriotic enthusiasm for the promotion of domestic manufactures. A Lancaster editor wrote as follows:

Lancaster, which could always justly boast of its amiable and industrious fair, acquires new honour from their exertions at the present period of national calamity. In promoting domestic manufactures at this awful crisis in the public sentiment, the ladies of Lancaster justly deserve the smiles of the patriot and the applause of their country. More flax and cotton have already been spun in this borough, than ever was known in a season. Some of the linen is equal in fineness, and far superior in quality to the Irish Holland, which sells in the stores at nine or ten shillings a yard. Spinning parties have become fashionable in some of the higher circles, — and rank, fortune, youth and beauty receive additional lustre from the "twirling of a distaff." (32)

About this time, when the importation of English textiles was cut off, New England cotton factories began to exploit the Lancaster County market. As early as July, 1808, yarn, bed ticking, stripes, checks, and shirtings from Samuel Slater's Rhode Island factory were sold in Lancaster.<sup>33</sup> Two years later the mercantile firm of Almy and Brown, of Providence, had a Lancaster agent.<sup>34</sup> The curtailment of textile imports also had the effect of greatly stimulating the factory movement in Lancaster County itself, as will be shown presently.

One important technological change which began shortly before 1810 was the transition of wool and cotton carding from a predominantly home and hand process to a shop or small factory operation. The former system prevailed in the area in the eighteenth century, although an occasional professional "wool comber" was found there as early as 1773.<sup>35</sup> Carding machines which appeared in the nation about the close of the eighteenth century were introduced into Lancaster County at least as early as the first decade of the nineteenth century. Machinery was advertised as being in readiness for "picking, breaking, and rolling Woll" (sic) at a Martic Township gristmill in 1807, and another wool carding machine was put into service in the same year at a mill on Conestoga Creek.<sup>36</sup> It is evident that these early carding machines were installed in conjunction with mills in order to utilize existing water power facilities. Cotton carding machinery was also erected in the county at least as early as 1809, while during the year reported in the 1810 census twenty-nine carding machines processed 77,970 pounds of wool and cotton fiber.<sup>37</sup> Hand carding, although still relatively common in the

area in 1810, continued to decline in the years which followed.<sup>38</sup> Carding machines invented by a Lancaster mechanic were manufactured in that city prior to 1835.<sup>39</sup>

Mechanical spinning and weaving machinery was also erected in the county about 1810 or shortly thereafter, thus presaging the coming of the industrial revolution in the local textile manufactures. The new textile machine works were variously known as mills, manufactories, and factories. Wool was the principal raw material, although cotton and linen were also manufactured in some establishments. Carding, spinning, and weaving were commonly carried on in the same manufactory, while other processes such as dyeing and fulling were sometimes included. All of these manufacturing processes were made available to the community on a custom basis, and it became possible for each home to reduce its cloth production activities to whatever minimum seemed desirable. As a result, the trend away from home textile manufactures was greatly accelerated.<sup>40</sup> The number of machines in the typical works under consideration was limited, and operations were conducted on a small scale. Thus the "Pigeon Creek Woolen Factory" had three carding machines and a picker, three spinning machines, and six looms.<sup>41</sup> Later another manufactory had two carding machines and a picker, one billy of thirty-two spindles, one jenny of sixty-four spindles, three looms, and fulling equipment.<sup>42</sup> The extent of the capital investment in one of these establishments is revealed by an approximate \$6,000 loss when the Rosehill woolen factory in Sadsbury Township burned in 1834 with nearly all of the machinery and a quantity of materials.<sup>43</sup>

All of the water power manufactories so far discussed were small and conducted by individuals or partnerships. In the summer of 1810, however, citizens of the county had under consideration a more ambitious scheme looking to the formation of a joint stock manufacturing company. At a meeting of interested persons, a committee was named to:

ascertain where, and on what terms, a suitable Site can be procured for erecting the necessary Water-works and Machinery; to ascertain whether suitable persons can be obtained to superintend the progress of the Work; to endeavor to procure a probable estimate of the Capital necessary to commence a Manufactory, on a liberal scale . . . (44)

The plan to form a manufacturing company did not mature for several years. In the meantime, some of the parties interested in the manufacturing company pooled their resources and, acting in partnerships, erected cotton yarn factories in the vicinity of Lancaster. One of these known as the Mill-Creek Cotton Works was operated for a time by the firm of William Hamilton and Company.<sup>45</sup> A second yarn factory operated by Jacob Miller and Company was known as the Lancaster Cotton Works.<sup>46</sup> This latter enterprise is of special interest, because it was absorbed into the manufacturing company when that project was later revived. Jacob Miller and Company was the firm name of a partnership of six men, each of whom contributed \$7,000 to a capital fund of \$42,000 which was to be used in the business of carding and spinning cotton, or in any other business which the partners deemed advisable. The factory and other necessary facilities were erected by Jacob Miller at his own expense upon land which he owned on Conestoga Creek, and the completed works were leased to the other five partners in consideration of an annual

The period of the War of 1812 generated added enthusiasm for domestic manufactures in Lancaster County, as it did elsewhere, and the manufacturing company project which had been considered in 1810 was again brought forward. In the summer of 1814, a meeting of interested parties named a committee of eight to:

. . . ascertain and report a system of rules and regulations for the government of any association which may be formed for the purpose of establishing a Manufacturing company for weaving, bleaching and dying (sic) cotton goods, on a liberal scale, and that the same committee be requested to furnish an estimate of the probable expence and probable profits . . . (40)

Evidently the committee did its work well even on the point of estimating probable profits, for a voluntary unincorporated joint stock company was soon formed.<sup>49</sup> Application was made for a state charter, and the same was granted by the legislature on January 16, 1815.<sup>50</sup> The new corporation, officially styled "The Manufacturing Company of Lancaster," was the first manufacturing corporation in the history of the county. In general, its charter was similar to those granted to other Pennsylvania manufacturing companies in this period. Total stock issues were not to exceed \$500,000, and the life of the corporation as a manufacturing enterprise was expressly limited to twenty years, although, of course, the charter was subject to renewal at the end of that period. The actual capitalization of the project was \$128,000 in 1820.<sup>51</sup> Persons actively interested in the manufacturing company represented various vocations, from which some idea can be gained of the sources drawn upon for capital. An incomplete vocational list of directors, and a few other interested parties, includes three merchants, and one of each of the following: confectioner, bank cashier, printer, bank clerk, tailor, clock maker, miller, and yeoman.<sup>52</sup> This list reveals that the project drew upon the resources of a fairly representative cross section of the business class, with merchants having the largest representation in the sampling.

On September 1, 1815, Jacob Miller and Company transferred their lease on the Lancaster Cotton Works to The Manufacturing Company of Lancaster. The main factory building was of stone, four stories high. Toward the close of the decade, the works included a number of brick and stone dwelling houses, and a dye house with four copper boilers and nineteen vats. At that time the machinery included about 2,800 spindles and approximately fifty-five looms.<sup>53</sup> The consumption of cotton reached 30,000 pounds annually prior to the Panic of 1819.<sup>54</sup> Water from Conestoga Creek powered the machinery throughout the period of this study, although by 1835 the mill was heated by steam passed through copper pipes.<sup>55</sup>

Difficulties soon beset the manufacturing company. A loss of \$1,500 or more was incurred from fire in 1816.<sup>56</sup> More serious than fire, however, were the economic strains of the post-war period. Engulfed by the flood of cheap British goods, the company met disaster, and the sheriff sold its rights in the cotton mill property.<sup>57</sup> Later, following a reorganization, the legislature granted a charter to a new manufacturing company styled "The Conestogoe Manufacturing Company of Lancaster" with many of the same rights, powers, privileges, and immunities which had been granted to its predecessor. Five of the seven trustees of the new company had been directors of the old.<sup>58</sup> However, more than a new charter was needed to make

the venture pay. For the year prior to the census in 1820, the machinery lay idle, and nothing was realized on the capital investment of \$128,000.<sup>59</sup> Here is a striking example of an ambitious textile manufacturing scheme which was ruined by British competition and the dislocations of the Panic of 1819. It is understandable that those who suffered so severely in this venture should be moved strongly toward the protective principle. In the post-war years these men joined hands with the iron-masters to supply a second major element of strength to the local protection movement.<sup>60</sup>

References to the cotton mill occur in the sources from time to time during the remainder of the period of this study.<sup>61</sup> When the mill was for sale in 1836, a local editor described it as:

... one of the most extensive, complete and best situated in the union  
... To Eastern capitalists, who are acquainted with the cotton manufacture, this property offers an opportunity for the profitable investment of capital that rarely occurs: And as it is the only cotton factory in the county there is a market at the door for all the goods the works can produce. (62)

This item reveals that the productions of the Conestoga cotton mill were absorbed by the local market, and that there were no other cotton manufactories in the county at the time. No other local cotton manufactories were begun between 1836 and 1840. At the latter date, the works on the Conestoga Creek ran 2,000 spindles, employed forty-five persons, and had an annual production valued at \$10,000.<sup>63</sup>

The county linen industry, long the leading textile branch, declined toward the close of the period under discussion, while woolen manufacturers advanced to first place. Production of hemp and flax combined was only seventeen tons in 1840, as compared to more than thirty-six tons of raw wool.<sup>64</sup> Decline of the linen manufactures in this period was due to the increasing competition of cheaper cotton textiles.<sup>65</sup> Some growth of the woolen industry is reflected in the increase of sheep in the county from 37,365 in 1810 to 41,967 in 1840, but this growth is so modest as to be almost insignificant in view of the vast increase in population during these three decades.<sup>66</sup> Ten woolen manufactories in the latter year employed fifty-seven men and manufactured annually goods valued at more than \$47,000. These were small individual or partnership enterprises in which the average number of employees was only five or six, and the average value of goods manufactured annually was less than \$5,000. The annual value of both cotton and woolen factory-made yarn and cloth was about \$57,000 in 1840, and these factory industries employed approximately 100 persons.<sup>67</sup> The figures cited reveal substantial progress toward the factory stage of production in textiles, however, much genuine home and small shop industry remained. As late as 1850, a surprisingly large number of the inhabitants of the rural districts of Pennsylvania followed the occupation of weaving, "evidently manufacturing cloths, etc. for domestic use."<sup>68</sup>

Prior to the Revolution, and again in the 1830's, efforts were made to establish a silk industry in Lancaster County. A few residents of the area, including William Henry, experimented with silkworms as early as 1771, and the cocoons which they raised were sold to the filature in Philadelphia.<sup>69</sup> The following year a fund was collected in Philadelphia to promote the culture of silk, and premiums were offered for the largest number of cocoons and the best samples of reeled silk. Awards were

made to citizens of the counties of Philadelphia, Bucks, Chester, and Lancaster. Four residents of Lancaster County received premiums for the production of cocoons, with "Widow Stoner" of this county taking first place among all competitors everywhere with 72,800 cocoons. First and second prizes for reeled silk also went to persons in Lancaster County.<sup>70</sup> This eighteenth century interest in silk had no important results beyond proving that mulberry trees and silkworms could be raised successfully. Labor, which tended to be scarce in the new country, could be applied much more profitably in other lines of endeavor, so that silk culture never passed beyond the experimental stages.

Silk enthusiasm was rekindled in Lancaster County in the 1830's when the silk boom of that period swept the country. A Lancaster editor wrote in 1836:

In the City of Lancaster four gentlemen have associated for the culture of Silk, and have procured four thousand White Mulberry trees by way of commencement. We understand there is another company about commencing, and a number of individuals intend to embark in it as soon as their seedlings are fit to transplant.<sup>(71)</sup>

Soon several silk establishments were in operation in the vicinity of Lancaster.<sup>72</sup> The cocoonery of Abraham and Christian Herr several miles south of the city had silkworm eggs for sale in 1840.<sup>73</sup> By the close of the period under discussion, the Lancaster County Silk Society was organized and actively promoting the cause, while the state silk convention met in Lancaster in 1839. In the same year a Lancaster editor noted the "mania" for making silk and was glad to see the citizens of his city in the foreground of this movement.<sup>74</sup>

The real motivating force in this silk boom was speculation in the white mulberry tree, *Morus Multicaulis*. Lancaster papers of the period carry many advertisements of Philadelphia nurseries which had this species for sale.<sup>75</sup> Mulberry trees were also planted within Lancaster County where there were plots of 40,000 and 50,000 in 1839.<sup>76</sup> With interest centered on the planting, buying, and selling of white mulberry trees which commanded fabulous prices, and with few people actually raising silkworms, the speculative bubble eventually had to burst. The folly of the times in Lancaster County is evident in the statistics of the Sixth Census. All of the local enthusiasm for silk worms, mulberry trees, silk conventions, and silk societies resulted in the production of a grand total of sixty-three pounds of silk in the census year!<sup>77</sup>

In closing this chapter, a few words about clothing as distinct from cloth manufactures will be in order. Early in the course of settlement practically all wearing apparel was made in the homes. The tailor as a clothing artisan appeared at an early date, however, for there were eighteen of these workmen in the town of Lancaster in 1773.<sup>78</sup> Since the tailor worked from individual customer measurements, and used simple tools easily transported, it may be assumed that the itinerant workman stage was more marked in this craft than in some others. One tailoring specialist, the pantaloen or breeches maker, appeared in Lancaster at least as early as 1763.<sup>79</sup> Another clothing specialist, the stocking weaver, was known in 1766 but, as the name implies, this craft developed out of weaving rather than tailoring.<sup>80</sup> Ready-made clothing appeared in Lancaster as early as 1843.<sup>81</sup>

The hatter represented an important handicraft which was recognized in Lancaster by the 1760's.<sup>82</sup> By 1794 the number of hatters in the borough had increased to sixteen who made 3,000 fur and 15,000 wool hats, while the entire hat industry reached an annual production level of approximately \$45,000 in 1810.<sup>83</sup> Wool was the principal raw material, but various furs were also utilized, including beaver, racoon, muskrat, fox, wildcat, seal, nutria, rabbit and Russian hare.<sup>84</sup> Matthias Tshudy, noted Lititz hatter, made chip or straw hats, 4,000 of which were manufactured in the county annually about 1810.<sup>85</sup> Various types of ladies' head-dress, such as straw and silk bonnets, were supplied by the milliners from whose shops came a considerable selection of other products. Thus Julia Logan, Lancaster milliner, advertised as follows in 1801:

**Ladies' Bonnets, Sattin, Silk, and Dunstable, of the newest Fashion; Turbans, Fancy Caps, Camel's-hair and Muslin Shawls, Handkerchiefs, Stockings; Silk, Kid, and Cotton Glove;; Straw Cord, Gimps, and a variety of Ribbons, Muslins . . .**

**Boot-web, Fringes, and silk Watch-strings manufactured, and Umbrellas covered. (86)**

Millinery shops as such were rare in Lancaster County during the period under discussion, but hatters such as Matthias Tshudy furnished headdress for women and children as well as for men.<sup>87</sup> The average housewife's skill in the manufacture of wearing apparel tended to keep the demand for professional millinery services at a minimum.

The total dollar value in 1810 of the various products of the manufacturing branches discussed in this chapter was more than \$240,000.<sup>88</sup> Thus the cloth and clothing industries considered together ranked fourth among Lancaster County manufactures at that time. Most of the productions of these industries were consumed by an expanding local market, although during the Revolution both linen and woolen goods were made for the provincial forces.<sup>89</sup> Toward the close of the period studied, the linen branch of the cloth manufactures declined as a result of the competition of cheaper cotton fabrics, while the woolen branch increased in relative importance. Textile shops which began to appear in the county prior to the Revolution, and the factory movement which began about 1810, contributed to the gradual decline of home textile manufactures; but this phase of home industry was still important in the area when the period under discussion came to a close.

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## NOTES

<sup>1</sup> *Pennsylvania Gazette*, June 14, 1770.

<sup>2</sup> Coxe, *View*, p. 312.

<sup>3</sup> Prior to 1800 most of the cotton consumed in the country was imported from the West Indies. R. M. Tryon, *Household Manufactures in the United States, 1640-1840*, p. 193 (cited hereafter as: Tryon, *Household Manufactures*).

<sup>4</sup> *Pennsylvania Archives*, 3rd Series, XVII, 454-465.

<sup>5</sup> Coxe, *View*, p. 313.

<sup>6</sup> Coxe, *Arts and Manufactures*, p. 44.

<sup>7</sup> See Chapter II.

<sup>8</sup> *Pennsylvania Archives*, 2nd Series, XIX, p. 720; *Votes of the Assembly*, III, 154.

- <sup>9</sup> See the assessment list tables in Luetscher, *Ger. Amer. Annals*, N. S., I, 149.
- <sup>10</sup> Coxe, *View*, p. 313.
- <sup>11</sup> See the assessment list tables in Luetscher *Ger. Amer. Annals*, N. S., I, 149.
- <sup>12</sup> Phila. Soc. for Promoting Agric., *Memoirs*, III, 137.
- <sup>13</sup> *Paradise Hornet*, Dec. 15, 1821.
- <sup>14</sup> *Lancaster Journal*, Sept. 2, 1797.
- <sup>15</sup> *Pennsylvania Archives*, 3rd Series, XVII, 454-485.
- <sup>16</sup> Lancaster Borough Assessment, 1814; *Volksfreund*, June 6, 1809; *Paradise Hornet*, April 20, 1822.
- <sup>17</sup> Photostat from unidentified newspaper, with the advertisement dateline, "Carlisle, August 30th, 1796." Private collection.
- <sup>18</sup> *Pennsylvania Gazette*, Feb. 4, 1768; *Neue Lancaster Zeitung*, Sept. 12, 1787, Oct. 15, 1788; *Lancaster Journal*, Oct. 29, 1819.
- <sup>19</sup> *Neue Lancaster Zeitung*, Sept. 12, 1787; Oct. 15, 1788; *Volksfreund*, June 6, 1809; *Paradise Hornet*, April 20, 1822; Tryon, *Household Manufactures*, p. 211.
- <sup>20</sup> *Lancaster Journal*, June 16, 1826.
- <sup>21</sup> *Lancaster Examiner*, Aug. 30, 1832.
- <sup>22</sup> *Lancaster Journal*, Sept. 2, 1797; *Intelligencer*, and *Weekly Advertiser*, Oct. 1, 1800.
- <sup>23</sup> Lancaster County Taxables, 1800.
- <sup>24</sup> *Pennsylvania Archives*, 3rd Series, XVII, 454-465.
- <sup>25</sup> *Intelligencer*, and *Weekly Advertiser*; Aug. 21, 1804; *Lancaster Journal*, Oct. 2, 1807.
- <sup>26</sup> *Lancaster Journal*, Oct. 29, 1819.
- <sup>27</sup> Coxe, *Arts and Manufactures*, p. 44.
- <sup>28</sup> *Neue Lancaster Zeitung*, Sept. 12, 1787.
- <sup>29</sup> *Lancaster Journal*, Oct. 25, 1811. See also, *Lancaster Intelligencer*, May 17, 1825.
- <sup>30</sup> Coxe, *Arts and Manufactures*, pp. 44-49.
- <sup>31</sup> Tryon, *Household Manufactures*, p. 244.
- <sup>32</sup> *Lancaster Journal*, Feb. 3, 1809.
- <sup>33</sup> *Ibid.*, July 8, 1808; *Intelligencer*, and *Weekly Advertiser*, Aug. 16, 1808.
- <sup>34</sup> *Intelligencer* and *Weekly Advertiser*, Dec. 8, 1810. Firm name given in source as "Abney and Brown." See another Lancaster advertisement of New England yarn in *Lancaster Journal*, May 31, 1811.
- <sup>35</sup> *Pennsylvania Archives*, 3rd Series, XVII, 454-465.
- <sup>36</sup> *Intelligencer*, and *Weekly Advertiser*, June 16, 1807; *Lancaster Journal*, Sept. 25, 1807.
- <sup>37</sup> *Lancaster Journal*, May 19, 1809; Coxe, *Arts and Manufactures*, p. 46.
- <sup>38</sup> Coxe, *Arts and Manufactures*, p. 46.
- <sup>39</sup> Hazard, *Register*, XV, 395.
- <sup>40</sup> *Lancaster Journal*, April 21, 1810; July 2, 1813; May 6, 8, 1816; Nov. 5, 1817; Sept. 29, 1820; *Intelligencer*, and *Weekly Advertiser*, June 1, 1816; *Lancaster Examiner*, Nov. 22, 1832.
- <sup>41</sup> *Lancaster Journal*, Sept. 29, 1820.
- <sup>42</sup> *Lancaster Examiner*, Nov. 22, 1832.
- <sup>43</sup> *Columbia Spy and Lancaster and York County Record*, April 5, 1834.
- <sup>44</sup> *Lancaster Journal*, Aug. 18, 25, 1810; *Intelligencer*, and *Weekly Advertiser*, Aug. 25, 1810. The quotation is found in the last reference.
- <sup>45</sup> *Lancaster Journal*, Aug. 7, 1812.
- <sup>46</sup> *Ibid.*, June 17, 1814; *Intelligencer*, and *Weekly Advertiser*, Sept. 3, 1814.
- <sup>47</sup> Deed Book 4, p. 490.
- <sup>48</sup> *Lancaster Journal*, Aug. 12, 1814.
- <sup>49</sup> *Ibid.*, Oct. 7, 1814.
- <sup>50</sup> Bioren's *Laws of Pennsylvania*, 1814-1815, chap. 12, pp. 12-16.
- <sup>51</sup> U. S., *Manufacturing Establishments*, p. 18.

- 52 Lancaster Borough Assessment, 1814; Deed Books, 12, pp. 350, 357, and 17, p. 35. The first directors were: John Swar, Henry Bear, Henry Keffer, Samuel White, James Huston, William Dickson, Christian Herr, Jr., Joseph Ogelby, Jr., John Bomberger, Benjamin Ober, James Humes, Henry Huffnagle, Christian Stauffer, Jr., Henry Cassel, and Christian Rohrer. **Laws of Pennsylvania**, 1814-1815, chap. 12, p. 14. Other interested persons included Jacob Miller, John Hoff, John Myer, and Matthew Waddel. **Lancaster Journal**, Aug. 12, 1814.
- 53 Deed Book 9, p. 649; **Lancaster Journal**, Dec. 19, 1817.
- 54 U. S., **Manufacturing Establishments**, p. 16.
- 55 **Lancaster Journal**, Jan. 1, 1836.
- 56 *Ibid.*, Aug. 28, 1816.
- 57 Deed Book 22, p. 28.
- 58 **Laws of Pennsylvania, 1818-1819**, chap. 44, pp. 69-71. Total stock issues were limited to \$200,000 and the period of the charter to sixteen years.
- 59 U. S., **Manufacturing Establishments**, p. 16; Deed Book 22, p. 29.
- 60 **Lancaster Journal**, March 5, 28, 1817; Oct. 8, 1819; Oct. 28, 1831.
- 61 Royall, **Pennsylvania**, 1, 172; **Lancaster Journal**, Jan. 1, 1836; **Intelligencer and Journal**, Nov. 17, 1840.
- 62 **Lancaster Journal**, Jan. 1, 1836.
- 63 **Compendium of Sixth Census**, p. 136.
- 64 *Ibid.*, p. 132.
- 65 G. W. Hensel, **Reminiscences**, p. 13.
- 66 Coxe, **Arts and Manufactures**, p. 75; **Compendium of Sixth Census**, p. 131.
- 67 **Compendium of Sixth Census**, p. 135.
- 68 **Seventh Census, Appendix**, p. 1018.
- 69 Hazard, **Register**, I, 63-64.
- 70 **Pennsylvania Gazette**, March 17, 1773.
- 71 **Lancaster Journal**, April 22, 1836.
- 72 **Lancaster Intelligencer**, Aug. 7, 1838; **Examiner and Democratic Herald**, Aug. 1, 1839.
- 73 **Examiner and Democratic Herald**, Aug. 1, 1839; **Intelligencer and Journal**, Feb. 18, 1840.
- 74 **Lancaster Intelligencer**, Jan. 8, 1839; **Lancaster Intelligencer and Journal** March 17, 1840; **Examiner and Democratic Herald**, Nov. 28, 1839.
- 75 **Lancaster Intelligencer**, Aug. 13, Sept. 10, 1839; **Examiner and Democratic Herald**, Sept. 12, 1839.
- 76 **Intelligencer and Journal**, Oct. 8, 1839.
- 77 **Compendium of Sixth Census**, p. 136.
- 78 **Pennsylvania Archives**, 3rd Series, XVII, 454-465.
- 79 Burial Records, Trinity Lutheran Church, Lancaster, Pa.
- 80 **Pennsylvania Gazette**, Dec. 18, 1766.
- 81 J. H. Bryson, **Lancaster Directory for 1843**, p. 10.
- 82 **Pennsylvania Gazette**, Dec. 18, 1766.
- 83 Coxe, **View**, p. 158; Coxe, **Arts and Manufactures**, p. 49.
- 84 **Lancaster Journal**, July 15, 1797; July 11, 1806, Sept. 18, 1807; Dec. 24, 1824.
- 85 *Ibid.*, April 21, 1797; May 27, 1808; **Amerikanische Staatsbothe**, April 9, 1800. Tshudy also operated a weaving shop.
- 86 **Intelligencer, and Weekly Advertiser**, Dec. 2, 1801. See also **Paradise Hornet**, May 17, 1823.
- 87 **Lancaster Journal**, April 21, 1797; **Amerikanische Staatsbothe**, April 9, 1800.
- 88 Coxe, **Arts and Manufactures**, pp. 44-49.
- 89 **Pennsylvania Gazette**, April 17, 1776; May 7, 1777; **Pennsylvania Archives**, 2nd Series, I, 671, XIII, 511, 520.